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The Course of Study

A MONTHLY PUBLICATION FOR TEACHERS AND PARENTS

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The Chicago Institute

ACADEMIC AND PEDAGOGIC

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CONTENTS

PAGE

TECHNICAL ART. *John Duncan* 259
CHRISTMAS WORK. *Arts and Crafts Committee* 265
PSYCHOLOGY. *Francis W. Parker* 271
PEDAGOGY. *Bertha Payne* 276
PEDAGOGICS OF NATURE STUDY. *Wilbur S. Jackman* 277
PEDAGOGIC COURSE IN PHYSICS. *Charles W. Carman* 279
CHEMISTRY. *Alice Peloubet Norton* 282
GEOGRAPHY. *Zonia Baber* 284
HISTORY AND LITERATURE. *Emily J. Rice* 289
HOME ECONOMICS. *Alice Peloubet Norton* 294
ART. *John Duncan* 296
SPEECH, ORAL READING, AND DRAMATIC ART. *Martha Fleming* 297
MUSIC. *Helen Goodrich* 302
FRENCH. *Lorley Ada Ashléman* 305
GERMAN. *Siegfried Benignus* 309
GREEK AND LATIN. *Allen W. Gould* 315
APPLIED ALGEBRA. *George W. Myers* 330
THE LIBRARY IN THE SCHOOL. *Irene Warren* 339
MANUAL TRAINING. *Ira M. Carley* 342
PHYSICAL TRAINING. *Carl J. Kroh* 344
CHARACTER OF THE SUPPLEMENTARY READING IN THE PRIMARY GRADES. *Flora J. Cooke* .. 346
KINDERGARTEN. *Anne E. Allen* 351
FIRST GRADE. *Harriet T. B. Atwood* 353
SECOND GRADE. *Antoinette Hollister* 355
THIRD GRADE. *Gertrude Van Hoesen* 357
FOURTH GRADE. *Clara Isabel Mitchell* 359
FIFTH GRADE. *Willard Streeter Bass* 361
SIXTH GRADE. *Edith Burnham Foster* 364
SEVENTH GRADE. *Katharine Stilwell* 366
EIGHTH GRADE. *Nott William Flint* 369
FRENCH CHRISTMAS SONG. (Music) 374
GOD REST YOU, MERRY GENTLEMEN. (Music) 375
CHRISTMAS HYMN. (Music) 376
ST. CHRISTOPHER. (Music) 379
CHRISTMAS SONG. (Music) 380
ZU BETHLEHEM GEBOREN. (Music) 382
THE FIRST NOWELL. (Music) 384
READING LIST 385

WORKS WRITTEN BY THE CHICAGO INSTITUTE FACULTY

PARKER'S Talks on Pedagogics.
PARKER'S How to Study Geography.
PARKER'S Talks on Teaching.
PARKER'S Uncle Robert's Geography, Parts I, II, III, IV.

JACKMAN'S Nature Study for Common Schools.
JACKMAN'S Nature Study and Related Subjects; Part I, Charts; Part II, Notes.
JACKMAN'S Nature Study Record for the Common Schools.
JACKMAN'S Field Work and Nature Study—Illustrated.
JACKMAN'S Nature Study for Grammar Grades.

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RICE'S Outlines of History and Literature.
RICE'S Syllabus of Work in History and Literature.

COOKE'S Nature Myths and Stories for Little Children.

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THE COURSE OF STUDY

A PUBLICATION FOR TEACHERS AND PARENTS

ISSUED MONTHLY—TEN NUMBERS A YEAR.

Technical Art.

John Duncan.

The word art has a very peculiar meaning to us to-day. There is something occult in the sound. It means something very expensive and out of the ordinary: for the most part oil paintings with gorgeous gold frames. The artists combine to keep up the mystery, and look upon themselves as especially sacred personages, inspired from above. In no other profession does so much self-approbation accompany the same amount of skill. Every painter of the most moderate accomplishment is a "genius." Then come the people who are not artists, but are artistic. They, too, though not quite so swollen with spiritual pride as the artists, are very superior persons, very haughty and exclusive. And last come the mere rank and file, common people, who are either very humble about themselves in their lost condition, or rank Philistines, who rather pride themselves upon their indifference to art questions.

Now this distinction between things that are artistic and things that are not artistic is largely an arbitrary one, as I shall attempt to show. The distinction between artistic people and Philistines is more imaginary than real. Many people who flatter themselves that they are artistic are merely canting Philistines, and many who fancy themselves unresponsive to art are only unresponsive to bad art, and have not had opportunity of appreciating the good. It is more a question of degree than a difference in kind. The ideal is low enough, alas, in some cases—mere straightness it may be, and smoothness, degraded and uniform color, or poor, mottled color. But nobody tries to ignore the æsthetic side of life altogether. Go into the most inartistic house and you will see evidences everywhere of taste of a kind—bad taste, to be sure, but still taste; there are indications that things have been chosen with an eye to something beyond mere utility. The walls are calcimined with color, or papered with an ornamental design. Stove and chair, table, rug, and china, all have their chosen shapes and colors. There are even adjuncts which are merely decorative: pictures, for example, or vases, or mirrors not intended for use but for effect.

Many artists, on the other hand, who paint beautiful pictures are content to live in ugly and vulgar homes. They do not apply the principles that govern their art to the little world about them. Their art stops short within the limits of their picture frames.

But let us consider for a moment the houses of the people who pride themselves on their taste in furnishings, and what do we find there? Too often a medley of ill-assorted things: a Persian carpet here and a Chinese embroidery there, a little Hindoo metal work and a few Japanese things scat-

tered about. The house, in short, is a museum of entirely incongruous objects. The owner is satisfied if the general tone of color is agreeable, and does not seek any further unity or fitness in his furnishings. We cannot look upon ourselves as civilized in this matter until all these queer things are housed in museums and we have developed a style of our own—till all our belongings have a definite function in our lives and fulfill that function, and all this litter is swept aside. A true order is the first condition of the beautiful. Any so-called beauty that comes from disorder, "quaintness," as it is called, is a beauty of a low kind. The first thing to do in making a house or a school or a garden beautiful is to tidy it up. In God's world there may be a place for what we, not comprehending the whole scheme, would call disorder, but in man's world there is no place for it. The forest may be picturesque in this sense, but our houses must not be. Apparent harmony must dominate everything there.

To test whether a thing is artistic or not we must ask these questions: Does it fulfill its function? Has it appropriate and pleasing shape and color? Stools that are of no use to sit upon or put one's feet upon; vases that do not hold flowers; chairs whose carving hurts the back; drawer handles that are too ornate to be pleasant to the grasp, are all in bad taste. Ceilings painted with landscapes and fruit are decorated inappropriately. The tiles around the gas stove in the room I occupy are ornamented with a realistic grape vine. The design is not altogether bad, but one feels that it is an uncomfortable place for the plant.

The best of our carpets are imitations of oriental designs, the best of our buildings little modified copies of Greek and Gothic originals. All the peoples of the past had an art of their own which expressed their peculiar aspirations and fitted their particular lives; we decorate our homes with their tools and weapons, with objects that served their commonest needs and which have no true place in our economy. We are satisfied with their leavings when our own furniture and domestic tools should be sufficient for our æsthetic as well as utilitarian ends. Our designers scramble for the scraps that fall from their richly furnished table. We are like the crow of the fable, decking ourselves with shed peacock plumes and congratulating ourselves mightily upon our fine appearance.

The early Christians were so poor that they could not afford to cut the stones to build new churches for themselves, and were compelled to fall back upon the ruined temples for material; they patched together sanctuaries from these fragments of classic art. We are not poor in the same sense; we can afford to get new stones and to cut them; we are only poor in soul. We inhabit Greek or Byzantine or Gothic houses instead of making for ourselves American houses. We remain strangers in our own homes.

The causes of this state of affairs lie deep and are bound up with many other questions besides the merely artistic one. In mediæval times the workman was free to express his own ideas in his work, subordinating them, of course, to a general scheme, yet happy in contributing his share of spiritual as well as material significance to the whole. To-day we have an aristocracy of artistic talent, the architects and designers, and a slave population of artistic nonentities, who merely carry out their behests. The problem of technical art education is to give these proletaires the franchise of art.

We must use machinery, Morris and Ruskin notwithstanding. The way of progress lies through the factory, slough of despond though it be, and only faint hearts turn back. We must struggle

through, like Christian, to the farther side. Mechanical improvement means that the necessary work of the world will occupy less of our time, and give us leisure for the finer part of life. A machine is, after all, only a tool. As yet the tools are cumbrous, and we are hampered by them, and obtain poor results. By and by we may hope for better things. We owe much already to photography, for example, and all the processes of mechanical reproduction bound up with it.

Our system of æsthetics must undergo a change. When the principle of the arch came in, the Romans disguised it behind a false architrave. The old ideas in art died slowly. Roman architecture simulated Greek for centuries. It was only in Byzantium that the arch was completely recognized as beautiful as well as useful, and was frankly exposed in their finest architectural works. Later, with the Gothic builders, a ruder and stronger broken arch took the place of the round one, and by and by it was in turn recognized and consecrated to artistic uses, and in the artists' hands became a lovelier thing yet than any former device for the spanning of the wall opening.

The girder has exactly the same history. It was first disguised behind stone masonry, and is now openly confessed only by the most intelligent architects, who are wresting from it possibilities for new beauty.

When printing was introduced it imitated manuscript and only little by little asserted its own characteristics. Engraving at first imitated pen drawing, and etching in turn imitated engraving. So with color printing; the first chromos mimicked oil painting, even to the texture of the canvas and the brush marks. Woven fabrics copied hand-sewed tapestries and embroideries, and so on, and so on.

In this way the machine has got a bad name and deserves it, deserves it as the Roman arch deserved it, and the Gothic arch, and the girder. But once let the machine frankly declare itself, and let the craftsmen be educated to use it properly, and we shall have new arts which are not imitations of anything else, but must be judged upon their own merits.

Throughout Europe there are signs of awakening interest in decorative art, technical art, industrial art, arts and crafts, call it what you will. Let me block out the history of art in the roughest way. You know that Europe and Asia have each had a sharply marked off art history of their own. Asia has all along devoted herself to ornament, design, pattern making, a subjective art springing straight from and expressing the soul, and in no wise concerned with the representation of things; whereas Europe has been objective, her eyes directed outward and her art literary and narrative. It has been representative of objects and events; story-telling has been its business, story-telling from the anecdote to the most dignified presentation of history. Think of the art of Italy and France, of Germany and England.

In modern times another art has grown up within this literary art. The mind of Europe has become scientific in the last two hundred years. So we have a scientific art—that of the naturalists, of whom Zola is perhaps the type in literature, and Bastien Lepage in painting—holding a mirror up to nature and reflecting her image without prejudice. Impressionism is only a development of naturalism, the naturalist mainly occupying himself with the surfaces and texture of things, and the impressionist with their appearances as affected by light and air, the one being as truly scientific as the other, and in the same meaning of the word. (I must be understood as speaking of painting and sculpture, for Europe has had, of course,

purely subjective arts in her early architecture and her modern music.)

And now in these latter days a strange thing has come to pass. Europe has become intensly interested in this purely æsthetic art of the East, the art of rhythms and tones and colors. Pure beauty is asserting its claims, and pushing the representation of things aside. We have painters who think that fine colors make fine pictures, even to the exclusion of almost everything else. Art for art's sake is the cry. Whistler discovered Japan and sat at the feet of the Japanese masters. Their art, he tells us, is a matter of the juxtaposition of tints—"arrangements" he calls his pictures built on Japanese models. All the tide of art sets in this direction. The Scottish painters, Lavery, Walton, Guthry, are carried along. Hornel and Henry set out for Japan, other Scottish and English artists to Constantinople and Egypt and Morocco, and they bring their Turkey-carpet pictures back with them to the exhibitions. The Americans are going the same way. Color, quality, tone—these are the watchwords, the touchstones by which all art must be judged and ranked.

Now together with this new school of picture painting the arts and crafts have been growing up. When Whistler was studying Japanese prints, Morris was busy with Persian embroideries. Morris made the discovery that our surroundings were sordid and ugly, and at the same time became dissatisfied with the art of the studio, which has no outlet into life. To make "arrangements" bound within a narrow frame did not seem to him to be enough. He wanted to "arrange" all our environment—to make the home, the city, beautiful—to transfuse all life with beauty. Whistler on the contrary was content to enjoy the dainty gardens of Japan, its silks, its richly carved and lacquered wood, its strange temples, its dances, and its festivals, without making any serious attempt at translating them into the terms of western life and applying them to the uses of the western world.

Morris opened workshops for the production of furniture, printing, stained glass, textiles, tapestries, and embroideries. He promoted the formation of the Art Workers' Guild, which in its turn gave birth to the Arts and Crafts Exhibition Society, and so the movement grew, spreading ever wider and wider.

After a long period of historical and realistic art, in which Nature has beheld her very form and feature, and man has pictured himself in every act of his complex material life through the centuries, we have in the last thirty years witnessed a great revival of æstheticism that has not yet reached its full growth but still promises immense developments. Of this movement the "art for art's sake" men are one part, and the arts and crafts men the other. The first is of the aristocratic type, and is for the few. The second is democratic, and is for all.

Fine art is for the wealthy only—the furniture of palaces at which the common people were allowed only to peep. Since mediæval times it has never spoken directly to the masses of the people. Applied art is for all, and finds its way everywhere.

How vain it is to hang pictures upon our walls if we do not attempt to make our own lives worthy subjects for pictures! We do not want our children to be mere connoisseurs and dilettanti, little prigs lisping the names of Botticelli and Cimabue, but actors and doers, world shapers, architects of cities and gardeners of the fields. A living art must better real conditions and be a direct force in the work-a-day world. The adoration of the masterpiece, of the Venus di Milo and Sistine Madonna is in most cases fetichism, a worship of stocks and stones, while all the time the neglected Spirit of

Art is whispering in our ears as the Muse did to the Poet, "'Foole,' sayde my Muse to me, 'look in thy heart and write.'" "The soul is progressive, and in every act attempts," as Emerson has expressed it, "the production of a new and fairer whole. The artist must employ the symbols in use in his day and nation to convey his enlarged sense to his fellow-men. True art is never fixed, but always flowing." On the stream of art the wave rises high, in a Parthenon, and passes on. "Beauty," he continues, "will not repeat in America its history in Greece. It will come as always, unannounced, and spring up between the feet of brave and earnest men. It is in vain that we look for genius to reiterate its miracles in the old arts; it is its instinct to find beauty and holiness in new and necessary facts, in the field and roadside, in the shop and mill."

"The artist need not cumber himself with the conventional nature and culture, nor ask what is the mode in Rome or in Paris, but that house and weather, and manner of living which poverty and the fate of birth have made at once so odious and so dear, in the log hut of the backwoods, or in the narrow lodging where he has endured the constraints and seeming of a city poverty, will serve as well as any other condition as the symbol of a thought which pours itself indifferently through all."

The change from one type of art to the other is tremendous. It involves a complete change of front; from the negative to the positive pole; from the merely contemplative and critical attitude to the active and constructive. The one art only reflects life—the other shapes and makes it. What this means for the happiness of all I leave you to imagine. Art must be judged in terms of its usefulness to the community. It must not be a thing apart, but must identify itself with actualities, and fit our material lives as closely as soul fits body, so that we have no movement of one that does not involve a corresponding movement of the other. We must fuse art and life together, "that soul and sense may make one music as before."

This is the hope of the Arts and Crafts movement, the inspiring thought at the core of it, to touch the dullest realities with a gleam of the ideal, to transmute the matter-of-fact into poesy with a real alchemy, bringing back ordered beauty to our disordered and darkened lives. New ideas are transforming education. The little inert listeners are becoming self-active willful beings. They are no longer considered as wine skins; to hold the precious liquor of knowledge, but as coworkers with the teachers toward definite, practical ends. Handwork, sloyd, is an established fact in the schools; design is coming in.

Art, as a thing by itself, is a sickly, enclosed hothouse plant. Industry, on the other hand, without art, is barbarous. What is design without manual training? What is manual training without design? Neither can do without the other. Let us bring them together (they are already almost at the point of contact), and the problem is solved.

Design is coming into the common schools. Let it come intelligently. We shall have, if we do not look to it, the tiresome copying of outworn forms instead of appreciation of the spirit—historic ornament without an understanding of the causes behind that shaped it. The students will be taught that there are only five orders of architecture instead of the five thousand that are possible. I spoke of the workman as a slave to the architect, but the architect himself is often a slave to a superannuated convention. His buildings are anachronisms.

Design is already being taught in the schools—design, you will hardly believe it,

without reference to its application. Can you imagine anything more fatuous than ornament that does not ornament anything? I heard of a school the other day in which this was being done. The teacher tried to enlist my sympathy, and complained that the boys could not be induced to take any real interest in ornamental design. They called it "fancy work." I think they named it rightly. The student can but follow the will-o'-the-wisp wanderings of a vagrant fancy—he has no other guide. The more sensible refuse such a mad leader; some may be hoodwinked for a time till they are tired out; nobody but a lunatic could go on to the end. The teacher in question claimed that the making of patterns developed in the boy a sense of relation and proportion. Relation to what? Proportion to what? To itself. But it has no self to start with —the beginning must be arbitrary; there is no reason for the choice of the first proportion; there is no center of relation —and after the beginning has been made the next step must be arbitrary too. Suppose we have made an outline—laid out a space—why should we divide it into five parts instead of three or seven? It is arbitrary—it is "fancy work," and so not worth doing.

Suppose on the other hand we have something to decorate. It must be something that is incomplete, that calls for decoration, either to mask some ugliness, or, it may be, only some shortcoming in the thing. In the one case it is a corrective measure, a patch; in the other it is the completion of a projected idea. No room for fancy here yet. The situation dominates the work and asks for a definite treatment; the circumstances condition the work. We have to deal with a room? Then we must consider the habits of the inmates, the function of the room, its size, proportion, and lighting. The more the circumstances condition the work the higher rank the work takes. The more space left for fancy to play about in, the lower the work ranks. Fancy is a little devilkin that dances in an empty brain-pan; whenever any real work is to be done the angel Imagination drives the imp away.

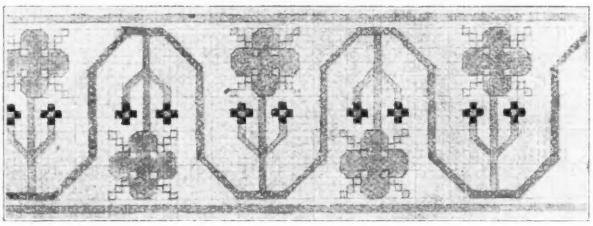
Instead of making patterns without reference to anything beyond, we must begin in the schools with the things that are about us. We must do the things that we are already doing daily—only more beautifully, and that will be art—true art. There is no reason in the world why a map should not be as beautiful as a Japanese print—I have seen some indeed that were. Charts and diagrams even can be treated in an artistic way—the lines laid out as beautifully as may be, and the colors selected with judgment and taste. Then there are mottoes and texts to be illuminated. You have seen these things badly done and so you may think that you do not like anything of the kind, but do them well and it will be quite another thing. There are presents to be made for parents and friends; there is the school itself to be beautified; everybody might help at that under the supervision of discreet persons, considering the choice of furnishings and planning all kinds of pretty devices for permanent or temporary decorations. Festivals, such as Thanksgiving and Christmas, may be celebrated in royal style.

If in doing this work we think out original and harmonious "arrangements," we shall be inventing new styles all along, styles which the pedants will by and by copy. They will measure off the proportions that we strike happily with a careless but unerring hand, and will impose them upon a slavish people, as they now attempt to impose the proportions of Greek art upon us.

"Give to barrows, trays, and pans
Grace and glimmer of romance;
Bring the moonlight into noon
Hid in gleaming piles of stone;
On the city's pavéd street
Plant gardens lined with lilacs sweet;
Let spouting fountains cool the air,
Singing in the sun-baked square;
Let statue, picture, park, and hall,
Ballad, flag, and festival,
The past restore, the day adorn
And make to-morrow a new morn.
So shall the drudge in dusty frock
Spy behind the city clock
Retinues of airy kings,
Skirts of angels, starry wings,
His fathers shining in bright fables,
His children fed at heavenly tables.
'T is the privilege of Art
Thus to play its cheerful part,
Man on earth to acclimate
And bend the exile to his fate,
And, moulded of one element
With the days and firmament,
Teach him on these as stairs to climb,
And live on even terms with Time;
Whilst upper life the slender rill
Of human sense doth overfill."

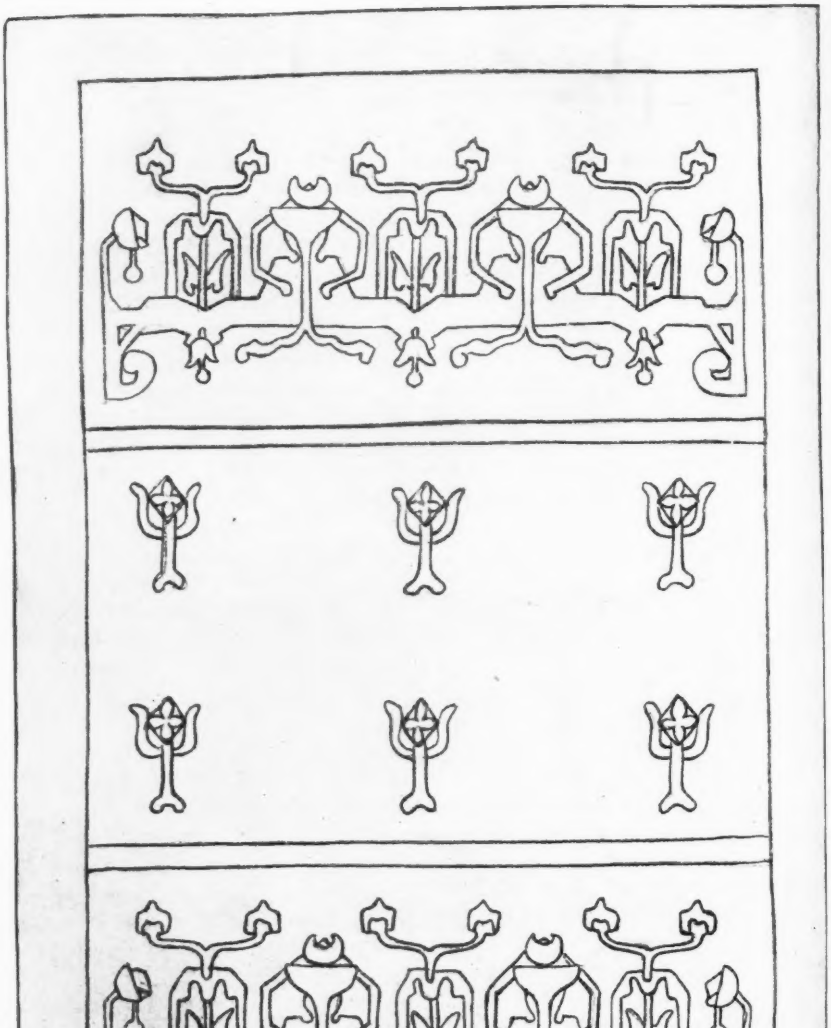
Christmas Work

DIRECTED BY THE ARTS AND CRAFTS COMMITTEE

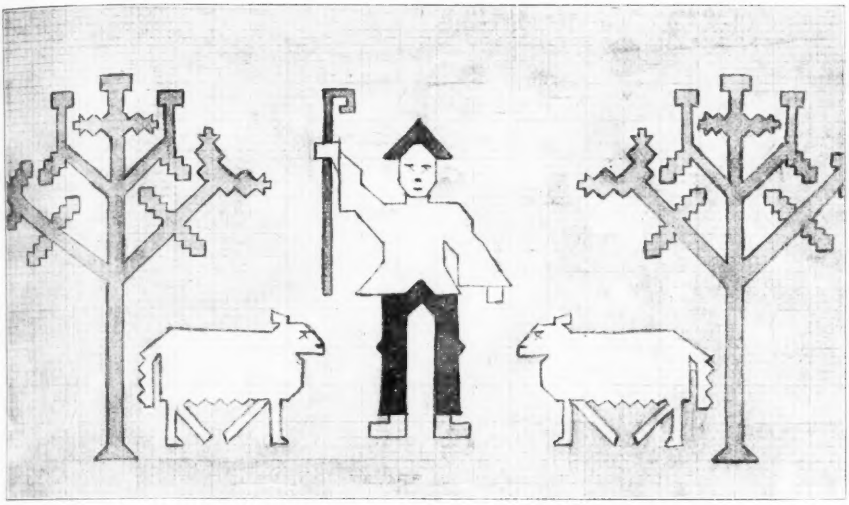


DESIGN FOR BORDER IN OUTLINE AND CROSS-STITCH

During the months of November and December all students of the school unite in preparing for the celebration of Christmas. Every child takes active part in the festival and in all the work it involves. Cooking classes study the preparation of the Christmas feast, different grades doing such part of the work as is possible to them; the literature studied is chiefly that of the Christmas season, and is planned to make more perfect the appreciation and enjoyment of the day; and the work in dramatic reading is the study of that literature with the direct purpose for its recitation in the general celebration. This celebration, which is an elaboration of the daily morning service or chapel, is made as beautiful as possible by recitation of fitting literature, the singing of carols, the telling of the Christmas story, and the giving of presents. As an expression of children of various ages and experiences and as an appeal to all, the program is made to include verses, stories, and songs fitted to the different ages; the presents made, too, show workmanship and taste in all stages of development. Every student in the school makes at least two presents, one of wood and another of metal, clay, or plaster, textile fabrics, paper, or leather. The processes involved in the making are woodwork and carving, iron-bending,



DESIGN FOR PORTIÈRE IN APPLIQUÉ AND EMBROIDERY



DESIGN FOR OUTLINE AND CROSS-STITCH

hammering in brass, modeling, and casting, weaving, embroidery, applique and sewing, simple bookbinding, drawing, and painting. The ideal being that every present given shall be as far as possible an expression of the giver's own taste, skill, and feeling, the children are encouraged to plan their own work and make original designs for construction and decoration. As helps, the teachers suggest articles which they think possible and appropriate, and show models which are to serve as inspiration rather than induce imitation. The hours devoted to manual training on the school program not allowing sufficient time for all the work to be done, special afternoon hours are arranged outside of the regular school sessions when all the students may meet in the workshops and work under the supervision of the teachers in charge.

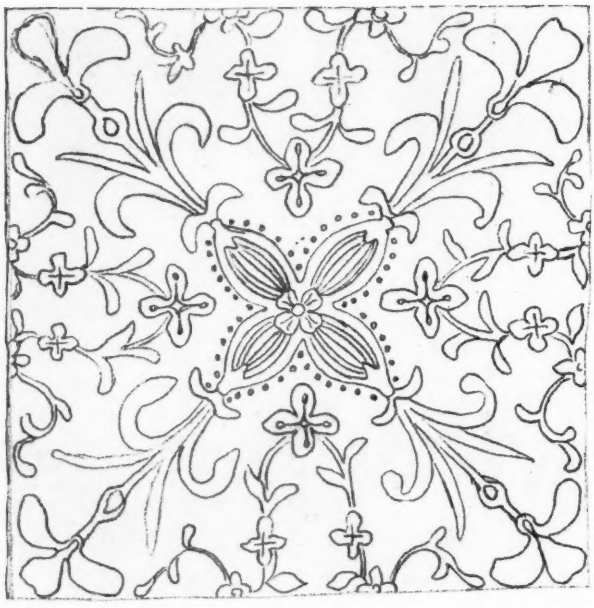
The work planned in textiles will include basket-weaving, beadwork, sewing, embroidery, appliqué, weaving, and crocheting.

Great variety of design is possible in basket-weaving both as to color arrangement and form. Splits and raffia will be colored with aniline dyes and woven into baskets of all sizes; basket of reeds, uncolored, will be lined to fit their various uses.

Cotton or linen fabrics woven on our handloom will be made into simple hangings, scarfs, and laundry-bags. Covers for cushions and hassocks may be woven of carpet yarn on the frames made for the purpose in the manual-training shop. Little bags, needle-book covers, and cushion covers, may be woven of silk or worsted.

Possibilities of design being limited in this weaving, attempts at design should be confined frankly to stripes or simple geometric forms based on the square and triangle. What is known as the "filling effect" being most easily carried out into this kind of design, the weaving is planned to show only the filling or woof threads; the warp threads being of finer texture and not placed closely together.

Bags, aprons, scarfs, belts, collar or cuff bands, table covers, pillow covers, and



DESIGNS FOR CUSHION COVERS IN APPLIQUÉ AND EMBROIDERY

book covers may be made of cottons, linens or silks ornamented with beads, embroidery, stitches, or applique, Cross-sticth, outline and satin stitch, chain and button-hole stitches will be used. Cotton sateens and art linens can be had in all colors and will be readily available.

The making of the banners described by Mr. Duncan in the outline for Art, and by Miss Fleming in the outline on Speech, Oral Reading, and Dramatic Art, will involve the coöperation of many different workmen, designers, draughtsmen, cutters, sewers, and embroiderers working together with common purpose. The banner illustrated in the frontispiece will probably be worked out in silk applique with embroidery; the banners for the procession, in cotton or linen materials. In this work, as in all of the decorative designing, the hope is to utilize as fully as possible all the work of all pupils. With this end in view, many designs will be accepted in whatever state of crudeness, will be carried on to higher stages of perfection by more skillful hands until they have become products worthy of their use. The decorations of the building being in this way the united thought and skill of the students, will truly express the life of the school.

The work in metals will be confined to hammered brass or copper and to bent iron.

Trays of various sorts and sizes and for many purposes; finger plates; panels for boxes and cabinets, and simple candlesticks are the only things proposed in brass or copper. A few possible designs for this work are suggested in the accompanying cuts.

The thinner sheets of brass may be appropriately and artistically used by very young children, who can make effective and good patterns with simplest tools and modeling. The fall studies of fruits and plants may be worked into ornamental designs for plaques and tiles, which can be modeled in clay, cast in plaster, and colored.

The children of the First Grade are modeling the fruits they have collected in their study of the distribution of seeds. These when finished will be used as paper-weights, which the children will present to their friends at Christmas-time.

The Second and Third Grades are illustrating the life of primitive man. They are modeling these illustrations in low relief, and the tiles are cast in plaster and colored. They are sufficiently decorative to be used as gifts.

The Fourth Grade children are recording in clay their observations of seed pods and their function in the distribution of seeds.

The Fifth Grade children have almost completed some illustrations of colonial life, and will model also in the round the animals, domestic or wild, which they are studying.

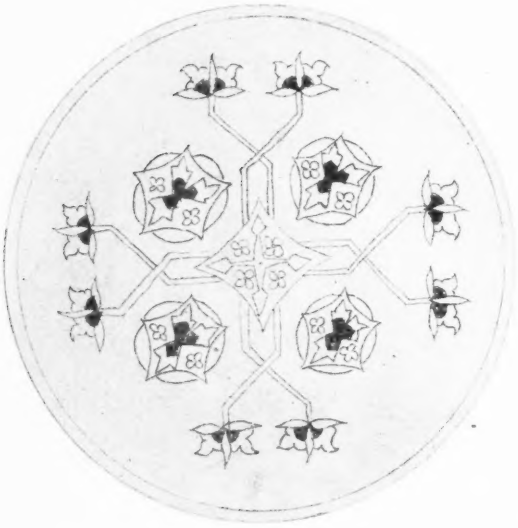
The work of the Sixth, Seventh, and Eighth Grades is to be correlated with the History.

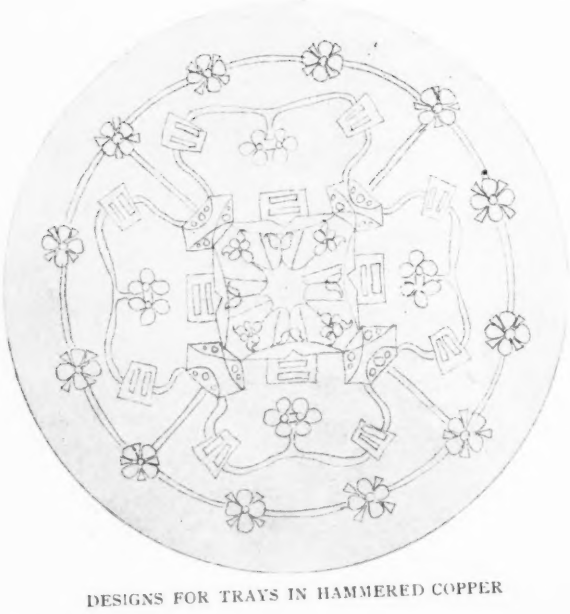
The following is an outline of the Christmas work in binding and illuminating. Students will choose their materials from the collection of samples displayed, and will also select their own sentiments and verses. The Christmas reading list published in this number will aid in the selection of literature.

1. CARDS: Christmas cards and leaflets on heavy vellum and paper with appropriate sentiments and lettering.

2. BOOKLETS: Favorite verses, Christmas poems, and carols lettered on vellum and laced into covers with suitable designs.

3. BOOKS: Binding of books in the sheets as obtained from the publishers. Covers in vellum folded over bristol-board, or mill-boards covered with paper, or

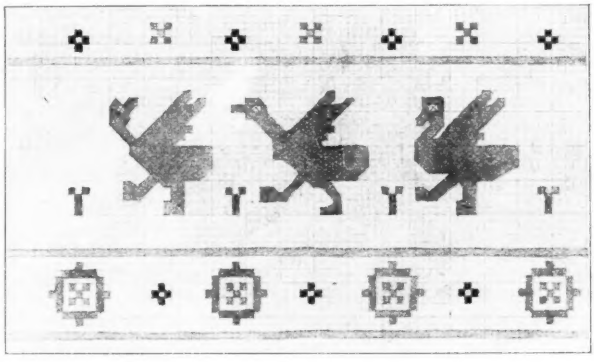




DESIGNS FOR TRAYS IN HAMMERED COPPER

leather. No gilding will be done. The designs for the leather covers will be burnt in, and all other decorations will be in ink or water-colors.

In this, as in all other work, the utmost encouragement will be given to originality and taste in conception, and freedom of expression.



Psychology

Francis W. Parker

Review of One Month's Teaching

I present first a few facts in elementary psychology:

I

I appeal to memory and find that I can recall a vast number of images; in fact, if I were to write my life history I should depend fundamentally upon remembered images. If I could not recall images I could recall nothing, i. e., I should have no memory. I test this in many ways, and always with the same result.

a. I am conscious of something.

b. That something of which I am conscious is in my consciousness.

c. All things of which I am conscious are in my consciousness.

d. I am conscious of nothing outside of my consciousness.

Is it possible for me to study consciousness?

I see the inkstand. The inkstand is not in my consciousness. Therefore I am not conscious of the inkstand. No part of the inkstand is in my consciousness.

Something is in my consciousness; otherwise I should not be able to see the object.

Which is the more real, the inkstand outside of my consciousness, or that something (image) in my consciousness?

Is it possible for me to study the inkstand?

I conclude instantly that it is possible. I analyze the inkstand. Does not that analysis depend entirely upon that something of which I am conscious?

I describe the object. Does not the description depend fundamentally upon the image of which I am conscious and which I believe corresponds to the inkstand?

Could I describe any object unless I had an image corresponding to it?

Is it possible for me to study that upon which my analysis and description depend?

I believe that I can study the inkstand; I know that my study depends upon the image of which I am conscious. Which is the reality to me, the inkstand outside of my consciousness, or its corresponding image in my consciousness?

Reading is imaging.

Some words arouse images in consciousness, other words assist in arousing images. I know this from repeated tests.

I study a printed description carefully. I am then able to recall a series of related images; I know that the printed words recalled the images. Can I not consider these images as realities? Can I not study them—how they came into consciousness, and what they are in themselves?

I can hold an image in consciousness and afterward tell how the image grew, how other images came in and became one with the image I held.

Studying is holding images in consciousness. I have studied. What images, the result of my study, remain?

II

Teaching consists in presenting conditions for the most economic action of the being in the search of truth.

A narrower definition is: Teaching is the presentation of conditions for the growth of necessary educative images.

All educational growth is by self-activity.

Judging by these statements, I have partially failed in my attempts to teach psychology. This being so, it becomes my duty to ascertain the difficulties that stand in the way of efficient self-activity on the part of each student. With this end in view, I asked the members of the Pedagogic School to state frankly the difficulties they have in investigating the contents of their consciousness. The students are all graduates of high schools (a four-years' course); some are graduates of universities, and more than half are teachers of successful experience. So it may not seem improper to say that they are above the average in intelligence.

The testimony given below proves either that the teaching has been inefficient, or that the subject itself is too difficult.

Students' Testimony

"I find it almost impossible to know what is in my consciousness, or to follow, independently, any direct line of thought. What I mean by the latter is to have a line of thought lead me to a conclusion."

"I can't come to any conclusions after I make an experiment. If I try to make an experiment my mind seems to be aware of it, or self-conscious, so to speak, and then I don't seem to be able to think freely. I suppose it is all because I have done more memory work than reasoning."

"In studying my consciousness I cannot look at all my daily thoughts and experiences as experiments. When I try to experiment with a conscious effort I do not know whether I am doing so naturally or in an artificial way."

"My difficulty is in presenting my thought in an intelligible form. I have, I fear, never thought consecutively, and when I try to work in this new way I try too hard and my mind is a blank."

"I have indefinite 'feelings' along certain lines, but cannot grasp or state them."

"My chief difficulty has been heretofore in trying to think of something great instead of holding an image of something near at hand."

"In beginning the experiments, I think my difficulty was in trying to find something wonderful and extraordinary, instead of taking the common things around me."

"I have been in the habit of getting things from books and of getting things in that definite way, and when I try to study in this other outside way and to think without books I can't do it; I am lost."

"My difficulty is in not having the habit of thinking. I have always accepted statements from text-books."

"My chief difficulty is that I have been always given some definite lesson to learn, and it

is difficult for me to realize that I must depend upon myself for everything which I am to get in the study of psychology. I am too dependent upon others and upon books."

"I do not know how to think for myself. I am dependent upon others or upon a book."

"I cannot think for myself; I have memorized a dozen pages, and recited them in class the next day."

"I have never been accustomed to carrying on any observations or investigations for myself independent of text-books, and I feel utterly at a loss. I simply do not know how to make independent experiments with my own consciousness, and have no sort of conception how to start out."

"I have been in the habit of studying from books, and find it exceedingly difficult to study my consciousness. Instead of finding material for my experiments in the common things, I find myself looking for something extraordinary."

"I feel the lack of proper early training. I need more systematic training for concentration of thought."

"My difficulty is a relic of early barbarism. The necessity of getting 'good marks' has made an indelible impression, so that even now, when I know better, I am afraid to say anything unless I am absolutely sure I shall give the 'right answer,' and I am thus hampered in expressing myself. Then, too, my power to think has been lessened by a course of book study and the accepting of ideas of authorities on questions without a personal investigation."

"I am sure it is my desire to be perfectly genuine, but thinking this matter over in the light of our discussion on the recitation, I fear I have been trying to say what I thought would meet with approval. I was willing to give the truth to the class if I was sure it was the truth, but I was not quite willing to make mistakes for their benefit."

"My past experience in study has not been systematic imaging, or holding an image and letting it grow step by step. I am happy to say it is getting lighter and brighter."

"In our former course we sat at our books hour after hour and crammed, and thought that we had learned something, and when we came to the class-room we fancied we knew something; but now I can hardly recall any of the work."

"My images have always been too indistinct. In the text-book work I had more than the image of words, but my images were vague. Now I realize I must be exact, and I cannot be so until my image is clear."

"I am unable to follow along a line of thought. I cannot concentrate my mind for any length of time on any given subject. I am always wandering off at the slightest distraction."

"I find it difficult to concentrate my mind on a certain line of thought. I cannot start on a line of experiments with myself without suggestions from class-work."

"It is hard to follow one line of experiments. My pictures grow so large that they overshadow the principal thought."

"When thinking of a subject and trying to develop the image, my mind wanders to other subjects, which crowd out the first. My images are disconnected and indefinite."

"I am not sure about what experiments I ought to make. I have made experiments, but have not told them in class, because I feared that they were 'fringe' questions and not what was wanted."

"I really do not know what to study. It seems to me that I go round and round the same thing and do not make any progress."

"It seems as though I wander around and have nothing definite to think about. I do not believe I know how to study my images."

"My study up to this time has been directed by teachers who assigned definite, specific work. Most of it was contained in books, and so I have always had the information sought for placed directly before me. Therefore the psychology work is difficult for me to grasp. To study my own consciousness seems rather vague, probably because I have never done it. The field of work seems too broad and indefinite."

"At first I could not see where I was going. I gained something from each recitation; but when I wanted to go on by myself I could not see where to go. Then, too, I wanted to take the whole universe. Recently, in following a train of investigation, a whole flood of light came to me. It all seemed simple, and I learn by keeping my mind quiet and receptive."

"I cannot concentrate my thoughts on the subject long enough. I am not able to go any further with my experiments than we have gone in class; and I do not seem to understand what I should get from the study."

"I do not know how to make experiments that are in line with the class-work. I am ob-

serving and thinking all day long, but whenever I have said anything, until to-day I have been told, 'That isn't the question.' Therefore I have kept still, feeling I would not help the class if I were off the subject."

"I do not seem to know what sort of experiments to try, nor what sort of deductions to make after I have tried the experiments. Every time I give a result of my attempts at experimenting I find I am off the subject, so there is no useful deduction possible from the experiments I have tried, because the experiments themselves are at fault. I should like to know what the center is, since I have not been able yet to get within the periphery."

"It seems to me that my difficulties are due to a lack of the right kind of concentration and knowledge of the subject, and to the constant changes and fleetness of the images in my consciousness to be studied."

"My difficulty in the study of psychology lies in my inability to carry on experiments in my own consciousness. It is very difficult for me to make a statement as to exactly where or what the trouble is, but it seems to be present, at any rate. At times I think that I have a glimpse, at least, into the work, and then again it is gone, and I am at a loss to find myself."

"When I try to study images or to hold them for growth I find I cannot do it, for before I have time to study them they are gone. I recall them again, but they are gone again. After I have studied them I do not see what good they do me, or why we are to study them. When I make observations I don't know whether they are the thing to give in class."

"At first everything seemed utterly without a point. Now it is somewhat clearer, but still things are hazy, and what few experiments I have tried do not bear upon the subject we are discussing. I do not seem to know how to make an experiment and get out of it anything useful.

"I have been studying other minds, mostly children's, and I find it difficult to adjust my thinking to my own mind, to focus upon my own consciousness. A very great trouble is now, and has been, self-consciousness."

"It has seemed to me that the entire difficulty was in myself, and that if I waited and really tried it would become clear to me. But now I think perhaps I have not made effort enough, having waited too much for the beginning to get clear."

"Already I feel the benefit of the little imaging I have done. I am conscious of a certain power in being able to watch the working of my own mind. While I see the benefit of the work, I feel I have come to the end now of imaging my own experience. I see that I have never really studied, have very faint pictures of any of my experiences. My effort now is not to let anything pass until I have an image of it in consciousness; but I want more to think of in psychology, and from this advanced step to look back on imaging; in fact, to carry it right along. If imaging is the simplest, perhaps it is the most difficult."

"What has helped me is seeing how the image has grown clearer and stronger in classroom work."

From these statements certain common difficulties may be discovered:

1. Overstrain, too much effort, an intensity that overshoots the mark; lack of quietness and relaxation of the mind.

Illustrations:

a. Very anxious to recall the name of some one whom we wish to introduce. Anxiety drives out the name.

b. An examination upon which very much depends. Neither words nor ideas come into consciousness. The cause is overstrain.

c. Trying to tell a story under stress of company.

2. A statement arouses a feeling of opposition.

3. Self-consciousness in speaking.

4. Doubt as to the value of the investigations, their personal value, or their value to others.

5. Desire to conform to the supposed wishes of the teacher, and to answer questions as he seems to require them to be answered.

6. Desire to come directly to some conclusion without going through a long, careful, and thorough investigation.

The following suggestions may be found of value in overcoming these difficulties:

Verify the statement, or prove, by investigation, that it is not true, keeping the

mind firmly to the task until it is accomplished.

Self-consciousness brings about a partial paralysis of the organs of speech. The cause is pride, and fear that what we say may meet with disapproval. Self-consciousness may be overcome by a strong desire to help the class. Such a motive may bring great strength out of personal weakness. The struggle to express that which seems obscure develops the thought or defines the weakness.

Interest is the emotion that makes study possible. Feeling of value is interest, and without it study is not possible. Therefore it is of importance to convince yourself that such investigations as we are now attempting are of real value to yourself and others. Ask yourself these questions: Is it of value to you to know why you study? To know how you study? To sum up the result of your studies? As teachers, to know when and how your pupils are studying?

Fix your mind upon the subject itself and not upon the teacher. He desires only honest thinking, not any set answer, or forced acquiescence.

Do you grow by the teacher's work, or by your own?

Besides these individual difficulties, there are two intrinsic difficulties in studying psychology:

a. A marked difference in individuals, owing to the predominance of some one kind of imaging. If the teacher is strong in visual imaging, it is difficult for him to appreciate the explanations of one who is strong in tactile or motor imaging. Students often fail to comprehend the psychological meaning of the word "image"; they may believe that it relates only to vision. The word "image" covers all the products of the senses, all correspondence to external things,—color, sound, form, and the images that precede and accompany motor discharge. And it comprehends, too, all combinations of images.

b. Images pass in and out of consciousness with the greatest rapidity; some are clear and vivid, others are vague. It is difficult to investigate a state of consciousness and at the same time have the imaging normal; the investigation is likely to check the movement or changes of images. For this reason the experiments (see COURSE OF STUDY) should, in general, consist of the recollections of distinct masses of related images that have been acquired in the past; for example: What have you of your life history? Recall certain interesting events,—a visit to the country, travels, etc.; some masses of images acquired by study of geography, history, etc. Experiments upon the effects of words, upon the psychological function of the parts of speech, etc., may be carried on freely.

Can you estimate the time you have wasted in school?

A fair composite answer is, "I have learned definite lessons, have recited many pages, have finished some books, but still I have only vague results of that study; at least, I cannot sum up the results of the study of any book in a body or mass of correlated images."

If studying is imaging, have I ever really studied? is a very solemn question. The whole question turns on this definition of study. Study may be the exercise of judgment, inference, reason, will, and it may be mere word memorizing. The images acquired may now be beyond the reach of memory, but the power to reason and the discipline gained by the exercise of the will remain. I may have lost the images acquired by study, but the power and habits of study remain. Do they? If I can study, then I can show good reasons for or against the proposition that studying is imaging. Can I?

If very much time and toil are wasted in school, is it not of the utmost importance to know the reason why?

Reread July number of COURSE OF STUDY, pp. 28 and 29.

One explanation is possible: Owing to the fact that the pupil has never really studied, he is not now able to investigate, to begin the study of his own consciousness.

On the other hand, it is more than possible that he has studied. He is in possession of a mass of related images in his own life history. Some of these images are distinct in themselves and strong in their relations to other images. He has made many plans in preparation for teaching, and for the making of useful articles. When he plans he must image; that is, think of the appearance of an executed plan.

NOTE. — No class I ever had tried harder or with more earnest thought than does the present one. This review is not a criticism, but the outcome of an attempt to teach better.

Pedagogy

Bertha Payne

The study during this month will center around the questions that relate to choice of subject-matter and materials, first for the children of all grades, later for the children of the kindergarten. We are led to this from a discussion of the teacher's function. Furnishing conditions for growth involves the choice of subject-matter and materials, and in such selections the teacher's great determining power holds sway. The questions arise, Does our selection always meet the children's interest? How shall we know beforehand what ideas will be formed concerning the matter presented?

I. Guiding Principles: 1. Experience of the mass of the children.

2. Leading interests that arise from the impulses that dominate at each stage.

3. Opportunities in the subject for (a) expression in making, painting, or other modes; (b) for investigation; (c) for experiment; (d) for choice or initiative in construction and experiment; (e) for co-operation.

4. Larger or more detailed interests growing out of the subject. Are all subjects equal in affording food for expanding interests?

II. Selection for the Kindergarten: In choosing subject-matter for the kindergarten we are thrown back upon our original problems: What are the needs of the children in the play period of growth? and how do they differ from those of the older children?

1. Physical activity: Opportunities for vigorous action. Subject must allow frequent change of movement, and even vigorous action in carrying out the ideas aroused. Is making with the hands a sufficient exercise for the body for the youngest? The plays of house-building and house-furnishing with the large blocks require real effort in placing and carrying. Can this proportion between imagery and execution be carried on throughout the year with the same opportunity for exercising the whole body? Watch groups of children and note the children playing singly; how long do they remain mentally busy and bodily inactive?

2. Interest: What are the interests universal enough to appeal to children in all conditions of life? The subject of home life covers a great variety of operations within the walls of the house. The garden furnishes a still wider range, as do also the

occupations or trades that contribute daily to furnish necessities and comforts at our doors. All these processes have an inherent interest for little children. How do they show it? Will these interests be food enough to furnish nutrition for mind growth throughout an entire year? Will the pursuance of them give moral and æsthetic impulses a chance for expression? Will it bring the oldest and youngest into natural co-operation?

Record all the plays you see of any children between the ages of three and ten years and note in each instance the subject, development, and manner of execution.

3. Differentiation of subjects: The point at which children begin to show their interests in different forms is valuable for the teacher's study. It is a question whether the larger subjects that are taken up in the school enter into the kindergarten. (a) Where are the beginnings of history, sociology, language, and domestic economy to be found? Have they a germinal phase of interest for the kindergarten child? Examine recorded plays with these questions in mind. (b) How do the youngest children begin nature study? Meteorology? Geology? Physiology? Botany? Zoölogy? Physics? Is the beginning of interest in all these phases of nature shown in any characteristic ways? Note and record instances of observations and experiments made from their own initiative by little children.

The subject of materials and playthings will be taken up in January.

Pedagogics of Nature Study

Wilbur S. Jackman

Observation

All education rests upon observation. Whether it is in the domain of Natural Science, where, obviously, all knowledge is gained by presentation of objects and phenomena to the senses, or in the field of History, where the lessons are to be interpreted and applied to life in its present condition, observation is of fundamental importance.

Observation is the mother of inference; given the former, and the latter is inevitable. Nothing points more clearly to the distinct personality of each human being than the fact that no two persons will make exactly the same inference regarding an object which they observe in common. Each observes from a point of view that is slightly different from that occupied by the other and his inferences vary accordingly. This may lead to endless contention; but discussion respecting the meaning of facts is always healthy until those engaged refuse to repeat their observations that their inferences may be corrected.

The natural test for the extent and correctness of an observation lies in the expression which the individual is able to give respecting it. While it is not uncommon for one to say that he sees and knows more than he can express, it is doubtful if this is ever true. The technique of expression in all its forms is exceedingly simple. For instance, in expressing himself through a drawing, the pupil is required to do so by means of lines, straight and curved, which he can draw with little or no trouble. The real difficulty lies in putting the lines together at the proper angle and in their right relations. But this does not belong to the technique of expression; the inability to represent by drawing must be referred, therefore, to the fact that the image is indistinct as a result of insufficient observation.

Again, in language, it is possible to describe things, most complex, by the use of words that are employed in common speech; yet it is not uncommon for pupils to say that they can see more than they can tell, although their ability to talk may be beyond question.

In modeling, the clay is most plastic. It readily yields to treatment, but there are comparatively few who can bring it into a form which belongs to the object observed. This is clearly not the fault of the material used, nor of the ability of the pupil to mold it, but the difficulty lies rather in an imperfect image that has been obtained through faulty or deficient observation.

The accuracy and the extent of an observation depend upon the purpose which controls the one who is making it. It is usually true that the desired knowledge concerning an object may be obtained through a partial examination and the observation upon this point will be clear in proportion to the importance of the knowledge. All other knowledge of the object, which is absolutely necessary if we are to have an image of it clear enough to enable us to fully represent it by any of the means of expression, is weak and defective because the observation has not been intense.

Drawing, painting, modeling, etc., are difficult, therefore, because they require an accuracy and extent of observation which is not considered absolutely necessary by most people. For example, one may know, for all practical purposes of his life, the house in which he lives, and yet he may be utterly unable to represent that house in a drawing. That is, while he might know the proper number of windows in the front, he would fail, perhaps, in getting the due proportions of each window, and this would be because that particular observation had never been called out by any function that the house or window had peformed for him. The window allowed light to come into the interior, and he learned to know it from this function, but he learned nothing more.

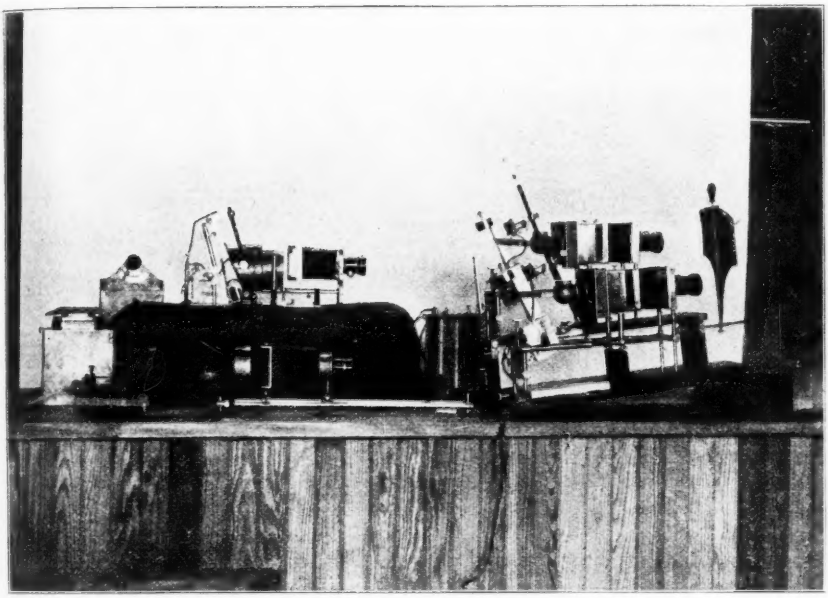
So in the study of a tree. The lumberman recognizes a tree by signs, most superficial, because his knowledge may end with knowing the kind of wood. The nurseryman by a glance merely at the fruit recognizes the different kind of apple trees in his orchard. Both, however, might utterly fail in an attempt to draw the tree, because its function, so far as they are concerned, has not demanded that close and specific observation which must precede any drawing.

The fact seems to be that most people see just enough of an object to enable them to dodge it. Very much observation, so called, results in nothing more than a mere consciousness of the *presence* of the object. No image of educative value is formed. It will be a surprise to any one to scrutinize closely the impressions received from an object, even after looking steadfastly at it for some time. He will find that he has been impressed chiefly by those characteristics and properties which indicate a particular function. Other characteristics and properties, no matter how important, lie indistinctly in the background of his consciousness, and it requires considerable effort, on returning to the observation, to bring them up to their proper relation in the image.

The great fault to be avoided, therefore, in planning and conducting work in observation is that of insisting upon the presentation of objects or parts of objects that make no appeal through their function. When this is done it is inevitable that the interest must be spurred on by factitious means which never come from honest purpose and never lead directly to real knowledge. Through this mistake, chiefly, arise all the difficulties pertaining to the various forms of expression.

Pedagogic Course in Physics

Charles W. Carman



Light, Shadow, and Color

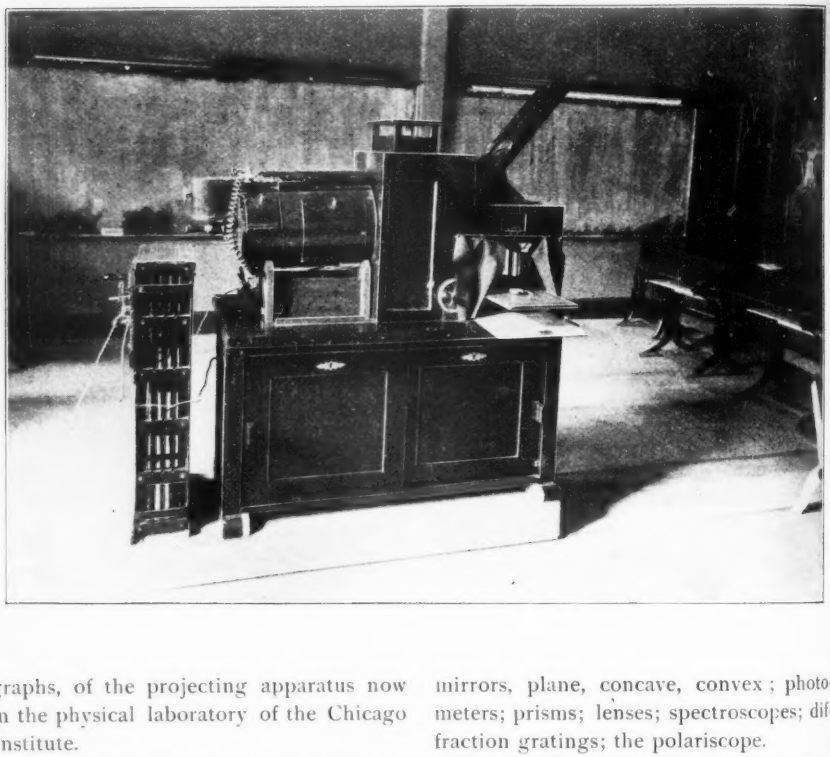
In following the outlines for the months of October and November, the principal correlation possible proved to be along the lines of "Observations in the Grades" and the study of "Physiography." That part of Physics proposed for study during the present month is susceptible of much wider correlation. It is proposed to give emphasis to the practical side of the work. The instructor will give demonstrations before the class and will require the members of the class to do the same. The class demonstrations will be upon the following topics:

Rectilinear propagation of light; images produced by small apertures; theory of shadows; images in plane mirrors; images in concave mirrors; caustics by reflection; convex spherical mirrors; the construction of a refracted ray; critical angle; total reflection; refraction through a prism; construction for deviation; images due to lenses; optical center of a lens; spherical aberration and distortion of images; dispersion; chromatic aberration; "artificial rainbows"; monochromatic light; spectra, kinds of; interference and diffraction; Newton's rings; thin films; the production of "artificial sky color"; spectra by means of diffraction gratings; Young-Helmholtz theory of primary color sensations; mixing colors; mixing pigments; composition of pigments; optical instruments, such as the achromatic lens, the

photographic camera, the eye, simple microscope, compound microscope, opera-glass, reflecting telescopes, refracting telescopes, projecting apparatus.

Nearly all of the demonstrations indicated above are shown by means of some form of projecting apparatus and a few simple accessories.

Reproductions are given from photo-



graphs, of the projecting apparatus now in the physical laboratory of the Chicago Institute.

During the month each member of the class will give demonstrations with the following forms of apparatus:

Oil, gas, and electric sciopticons; oil, gas, and electric stereopticons; helioptic-ons, and the epidiascope.

The other reproduction is from a photograph, not of the object itself, but of the projection of the object upon a screen by means of the epidiascope. Although the minute details of the structure of the shell are seen distinctly, the object photographed is nothing but an image. The shell from which the image was produced is slightly smaller than the reproduction.

The individual laboratory work will be with the radiometer; camera obscura; mirrors, plane, concave, convex; photometers; prisms; lenses; spectroscopes; diffraction gratings; the polariscope.

Each student will be furnished drawings and descriptions for the construction of a simple form of sciopticon.

The "Holmgren Test" for "color-blindness" will be made by members of the class.

Defects of vision will be tested and an effort made to measure the amount of the defect.

CORRELATION:

With Nature Study.—The light from the sun, moon, and stars; the color of the sun and other stars; the color of sunsets; the color of the landscape, the water, and the sky; the color of the spring and of the autumn leaves.

With Astronomy.—The composition of the stars; eclipses; telescopes.

With Mathematics.—Micrometric measurements.

With Psychology.—Relation between physical and mental images.

With Physiology.—The construction of the human eye; the optic nerve; the design and use of the ophthalmoscope.

With Art.—The absorption and reflection of light; mixing colored lights; mixing pigments; the composition of pigments; permanent colors and colors that fade.

With Home Economics.—Wall-paper and calcium colors; color as a test of food products; the color of clothing.

With Latin, Greek, French, and German.—The derivation of terms used in the study of light, such as "telescope," "microscope," "spectroscope," radiometer, stereopticon, etc.

With Manual Training.—The construction of optical apparatus.

With the Library.—References:

Elementary.—Woodhull, J. F., *First Course in Science;* Mayer and Barnard, *Light;* Hepworth, T. C., *The Book of the Lantern;* Dolbear, A. E., *The Art of Projecting;* Hall, E. H., *Lessons in Physics*, pp. 69-103; Harrington, C. L., *Physics for Grammar Schools*, pp. 93-104; Stewart, Balfour, *Physics*, pp. 89-100; Bert, Paul, *First Steps in Scientific Knowledge*, pp. 25-38; Hopkins, G. M., *Experimental Science*, pp. 200-346.

General References.—Carman, C. W., *Outlines of Physics*, pp. 128-146; Crew, H., *Elements of Physics*, pp. 292-338; Nichols, E. L., *Outlines*, pp. 370-425; Stratton, S. W., *A Laboratory Course in Physics;* Hastings and Beach, *General Physics*, pp. 599-752; Carhart, H. S., *University Physics*, pp. 226-335; Preston, T., *Theory of Light;* Tyndall, *On Light;* Vogel, *Chemistry of Light and Photography;* Tait, *Light;* Lommel, *Nature of Light.*

Lectures:

December 11, 12:00-1:00, Room 10, Dr. Henry Crew, Professor of Physics, Northwestern University, will give an experimental lecture before the class on "Some Illustrations of the Wave Theory as Found in Light, Shadow, and Color."

December 18, Professor S. W. Stratton, Associate Professor of Physics, University of Chicago, will give an experimental lecture before the class on "The Measurement of Light Waves.

Both Dr. Crew and Professor Stratton are doing research work in the subjects upon which they are to speak.

Chemistry

Alice Peloubet Norton

The work for the year in chemistry began with a study of fruits and leaves. The determination of the amount of moisture in the leaves led to the discussion of the question whether we were justified in assuming that the loss on evaporation was wholly water. Some facts seemed to indicate that we were not, as for instance, that the addition of water to the dried fruit does not restore it to its former flavor. One pupil heated some apple in a test tube, as gently as possible, and with the help of a condenser collected the moisture given off. Upon testing with litmus he discovered the liquid to be acid. The same pupil is trying to collect the moisture given up by the leaves at the temperature of the drying-oven.

The class concluded that we could not at present determine what substances were given off to cause the loss in weight upon the charring of the dried leaves, and this was left for future study. Nearly all recognized the carbon.

While the drying of the fruit and leaves was going on, the physical properties of water were studied as outlined, each pupil ascertaining certain facts for presentation to the class. The determination of the chemical composition of water by means of electrolysis, with a comparison of the volumes of the two gases formed, and the testing of each, is followed by the further study of hydrogen and its properties. After its preparation from zinc and acid, and the synthesis of water by the burning of a jet of hydrogen, the same gas is again obtained, by the action of sodium on water.

Each pupil prepares oxygen in the usual way with potassium chlorate and manganese dioxide, studies its properties, and writes a clear, concise outline of the subject, giving both the results of personal observation and of further study from reference books. The formation of oxides from the oxygen of the air is shown by igniting in an open crucible five grams of zinc dust or of pulverized iron, carefully weighed before and after heating. The zinc must be heated with care to avoid volatilizing the oxide. The student is asked to compare combustion in oxygen with that in air and to inquire what kind of substance is probably present in air in addition to the oxygen. If the questions of the class lead to it, the proofs that air is a mixture rather than a compound will be given. The following experiment will illustrate the composition of air and the properties of nitrogen:

Wet the inside of a test tube and put in some iron filings, leaving in those that cling to the sides when the test tube is turned upside down. Invert the tube in water and leave for twenty-four hours. Insert a lighted splinter of wood in the gas remaining in the tube. Measure the water in the tube and the capacity of tube.

The student who has been able to do more rapid work than others may make the determination of the weight of a liter of air as follows:

Place 25 c. c. of water in a stout flask of about 250 c. c. capacity, and boil until the interior is full of steam. Remove the lamp, cork the flask tightly, and allow it to cool. Weigh accurately. Draw the cork and determine the increase of weight. Find the volume of air weighed. From these values, calculate the weight of one liter

of air under the conditions of the experiment. The result is approximately correct.

A return to the work with the leaves shows carbon to be an important ingredient of these, and this element is next considered, and in connection with it the study of combustion will be continued. The following experiments, among others, will be used:

(a) Shut the holes of a Bunsen burner, and hold in the flame the edge of a cold, dry evaporator. Open the holes and see if you can burn off the black which collected.

(b) Sprinkle a very little powdered charcoal in the flame.

Examine the structure of your lamp. Explain the difference in the color of the flame when the holes are open and when they are shut.

Press down upon the gas-flame a piece of cold fine wire gauze.

Turn off the gas and hold the cold wire gauze about 6 inches above the burner. Turn on the gas again and hold a lighted match above the gauze.

State the three conditions necessary for combustion. Why does blowing a flame sometimes cause it to burn and sometimes extinguish it?

Insert a piece of wood in an ignition tube and hold in the flame of your lamp. Light the gas which comes off at the open end of the tube. Examine the residue and burn it on a piece of wire gauze.

Put a piece of glowing charcoal in a deflagrating spoon into a covered bottle full of air. When it ceases glowing, remove and insert a lighted match. Name the gas made. Pour in the bottle about 5 c. c. of lime-water and shake.

Test in the same way a bottle full of air.

Breathe through a short glass tube into a test tube containing 10 c. c. of lime-water.

Carbon dioxide will also be obtained from marble, and the test for carbonates given; as a product of fermentation; by the action of yeast on molasses; and as a product of decay.

Dissolve 5 c. c. of molasses in 50 c. c. of water. Fill a test tube with the mixture, and add to it a little yeast. Invert the test tube in an evaporating dish filled with more of the mixture (the clamp of the ringstand may be used to keep the test tube in place), and leave until the next exercise. Then pour the gas into 5 c. c. of lime-water in another test tube.

The questions, Is there carbon dioxide in the air? Why not in large amount? What becomes of it? will lead to a consideration of the relation of this gas to the life of the plant, and the source of some of the carbon found in the fruit and leaves.

Throughout the work constant reference is made to the materials with which the course started, in order to give a definite aim to the investigations, and to form in the mind of the pupil a clear image of the processes and results of plant activity. Mathematics has been introduced in the calculation of percentages of water and carbon in leaf and fruit, of the amounts of oxygen and hydrogen in the water of the leaf, and in the estimation of the proportion of these different elements in the whole plant, and in similar problems. Incidentally the pupils have learned the metric system, the use of the centigrade thermometer, and its translation into Fahrenheit, and have acquired some skill in bending glass and other manipulations, and in weighing.

Geography

Zonia Baber Wallace W. Atwood

The lack of an audience genuinely interested in what the student says and does leads to a result deplored by every teacher of wide experience—a lack of enthusiasm in recitation.

When forty pupils are requested to write upon the same subject, for no other apparent reason than that the teacher, who already knows what they have to tell, may read their papers, mark them with a blue pencil, or gently consign them to a waste-basket, they are frequently induced to put forth the necessary effort only by means of bribes or threats.

To secure for our pupils the consciousness of an interested and appreciative audience an effort is being made to establish a correspondence between the students of the Chicago Institute and students in certain schools in foreign places. The object in view is to establish personal relations between our pupils and the other people of the world.

Our pupils will send to the foreign children specimens of their regular school work, such as drawings, paintings, small pieces of work in textile fabrics, written exercises, photographs of field, laboratory, and dometic science work. Something of the geography, meteorology, botany, zoölogy, history, and industrial activities of this region will appear in the descriptions. By this means we hope to give the children of other lands a picture of certain phases of life in this locality, including the games of the children, their home life, theaters and other entertainments.

We trust that our friends in other countries will so far as is possible give us a similar account of their lives and surroundings.

A child who represents in color a landscape, a bird, or autumn flowers, models in clay the animals in the zoölogical garden, or describes the sand dunes near Chicago for other children whom he knows of as friends through their letters, and whom he knows to be unacquainted with this environment, will have a far deeper interest in his work than an inferior motive can command.

Moreover, descriptions of foreign countries found in books seem colorless to children when compared with similar statements in personal letters. A letter from a child in Northern Norway stating that at Christmas-time he goes to school by moonlight, as the sun, at this time of year, is not seen for some weeks at his home; or one from Sidney, Australia, telling of the heat at Christmas driving the people to seek comfort in the mountains; or a letter from Java telling of yearly summers and almost equal days and nights throughout the year, will arouse questions in the student's mind, the solution of which will lead him into many interesting phases of geography,

The close relation which a personal correspondence with the different nations suggests, leads to the development of a fraternal attitude toward all peoples—a world sympathy — which is one of the highest aims of our teaching.

Schools in Correspondence with the Chicago Institute

Mexico City, Mexico; Hilo, Hawaiian Islands; Honolulu, Hawaiian Islands; Tokio, Japan; Kobe, Japan; Fusan, Korea; Seoul, Korea; Shanghai, China; Calcutta, India; Udaipur, India; Kandy, Ceylon; Djokjakarta, Java; Cairo, Egypt; Jerusalem, Palestine; Athens,

Greece; Christiania, Norway; Berlin, Germany; Paris, France; Vienna, Austria; Rome, Italy; Sidney, Australia; Wellington, Cape Colony; Manila, Philippines; Havana, Cuba.

Physiography of the Land

NINTH GRADE

X. Glaciers. The work during this month will be a development of the study of glaciers and glacial formations, as introduced on the several field trips taken earlier in the quarter. The syllabus given in the November number, pages 187 and 188, suggests the manner in which the subject will be treated. The references on glaciers, given on page 188 of the same number, need not be repeated here.

General Geology

ELEVENTH GRADE

During the months of October and November it has been the aim, in this course, with the aid of the field trips, to have the students become acquainted with those processes which are to-day bringing about great geological changes, and also to have them become familiar with the common rocks and with the structural forms found in the great rock-formations.

This month the work will be based on the study of physiographic areas of the United States beyond our immediate environment. In this study it will be the aim to introduce enough geology to make the history of each area clear and the picture of the present conditions in each area real. After this ground has been covered it is hoped that the general subject of Historical Geology and Continental Evolution will mean more to the student.

IX. The Coastal and Gulf Plains.

1. Location and physiographic boundary. (a) The "Fall-line." Geological conditions at the "Fall-line." Relations of these falls to the early history of this country. (b) The present shore-line. How is it changing? (c) The edge of the continental shelf.

2. Topography of the coastal plains.

3. Drainage of the coastal plains. (a) What is the story of the old rivers crossing the lowland? (b) What is the story of the young rivers of the lowland?

4. Geological formation and structure. (a) Origin of the material. (b) Present condition of the sediments. (c) Artesian wells in the sand-reefs.

5. Settlement and development. (a) Location of towns. (b) Occupations of people.

X. The New England Plateaus:

1. Location and physiographic boundary. (a) The inland margin of the area. (b) The present coast line. How is it changing? What recent changes has it suffered? Influence of shore line on settlement and occupations in New England.

2. Topography of New England. (a) Erosion history. (b) Glacial history.

3. Drainage of New England. (a) Story of the old rivers. (b) Explanation of the lakes.

4. Geological formations and structure. (a) How have these influenced the development of the topography?

5. Settlement and development. (a) Location of towns. (b) Occupations of the people.

XI. Piedmont Plateau. 1. Location and physiographic boundary. (a) The Fall-line. (b) The Appalachian mountains.

2. Topography. Its erosion history.

3. Drainage of the Piedmont belt.

4. Geological formations and structure. (a) How have these influenced the development of the topography?

5. Settlement and life in the Piedmont belt.

XII. The Appalachian mountains. 1. Location and physiographic boundary.

2. Topography of the mountains. (a) Develop fully the erosion history of this belt. (b) Influence of topography on migration of peoples.

3. Drainage of the Appalachian. (a) The story of the great rivers.

4. Geological formations and structure. (a) Source of material. (b) Original position of sediments. (c) Present position of beds. (d) Mineral resources of this area.

5. Settlement and development. (a) Location of towns. (b) Occupations of the people. (c) History of migrations through this belt.

If time permits other areas will be treated much the same as suggested above.

References: Scott, *Introduction to Geology;* J. W. Powell, *Physiographic Regions of the United States;* Davis, *Physical Geography;*

Davis, *The Physical Geography of Southern New England;* Bailey Willis, *The Northern Appalachian;* C. W. Hayes, *The Southern Appalachian.*

Pedagogic School

The course of study for the Pedagogic School for December will be the consideration of the motive for teaching the subjects outlined below, together with the application to the different grades. The invention of laboratory experiments by which the forces and results in nature can be produced in miniature will be strongly encouraged.

I. Wind: Its use and work.

(See Meteorology—Course of Study, October.)

1. Evidences of air currents.

Report observations in movement of clouds, smoke, dust, leaves. Height to which seeds and other materials are carried.

2. Velocity: of ordinary wind; of storms.

3. Direction of wind movement at Chicago; of prevailing winds; of storm winds; of clearing winds.

Field Trip to Dune Park.

Students were given the following syllabus as an aid in the field:

FIELD WORK AT DUNE PARK

Material Needed: Take, if possible, baskets, knives, bottles or jars, compass, clinometer, level, magnet, trowel, hydrochloric acid, notebook, and drawing material.

I. Points of Observation

I. Between Chicago and Dune Park.

Topography of the country.

1. Relation of land and water. Presence or absence of rivers, lakes, swamps; shape of valleys; wearing or building of streams.

2. Relation of ridges to depressions. Height, width, and direction of ridges; distance between ridges; drainage of depressions.

3. Material of ridges.

4. Vegetation on ridges, in swamps.

II. At Dune Park.

Topography of the region; relation of hills and depressions. (a) Walk to the ridge south of the railroad track, estimate the distance between this ridge and the next distant south ridge. Note topography, soil, and vegetation of the intervening depression; note soil and vegetation of the ridge. (b) Walk northward toward the lake.

1. Hills: Find a hill where a cut reveals material. Shape, height of the hills. Measure the inclination of the steepest slope; the least inclined slope; note the direction of each. Material found; shape, size, composition, stratified or unstratified. Note definitely how the wind is affecting the sand to-day; beginning of dunes; relation to obstructions; relation to direction of wind; exact process of formation.

2. Depressions: Shape; soil; comparative altitude; relation of depressions to each other.

3. Lake shore: Shape of the coast; width of the beach; angle the waves strike the shore; shape and height of the waves as they approach the shore; material brought in by waves; direction of return of the water from the shore; material taken back by the waves; color of water near the coast, off the coast. Note the exact process of the formation of beach ridges.

II. Vegetation

I. Swamps.

1. Make a careful collection of specimen plants which are found: (a) in the dryer portions; (b) on the margins; (c) growing in the water.

2. Make a careful diagram showing the position of each kind of plant in its relation to the swamp.

3. Is the present vegetation tending to perpetuate or to extinguish the swamp?

4. Is there any evidence of an earlier vegetation in the swamp areas?

5. What kinds of woody plants are found in the swamp areas? Have any trees gained considerable age? The oldest?

Note.—If you do not know the names of the trees, bring to the class with you small pieces of the wood, and small branches with leaves.

6. Do the plants tend in any way to spread the marsh-like conditions?

7. Consider the part played by each kind of plant found in the swamp: (a) the pond-lilies; (b) the rushes; (c) the algæ; (d) the grasses and sedges.

8. Can you see any interrelations among these plants?

9. How many of these plants are flowering—*i. e.*, produce true seeds?

10. How are these seeds distributed? What plants adapt their seeds for water distribution?

Do the seeds float? When? Can you find them at the bottom of the water?

NOTE. — In all cases, collect and bring specimens to class with you.

11. Are the plants mostly annual or perennial? Are the conditions more favorable for one than the other?

12. In what ways do the vines find favorable conditions?

13. Consider what must become of the plant at the end of the growing season; what are the chances of fossilization?

14. What would be the first steps to be taken in reclaiming the marsh for the purpose of raising cultivated plants that might be grown here?

15. Are there any swamp-loving cultivated plants that might be grown here?

16. Are there any peat formations that might be used as fuel?

17. Are there any signs of bog-iron ore deposits about the marsh?

18. What are the relations of the swamp to bog-iron ore deposits?

NOTE.—Collect and bring to school for laboratory study a sample of swamp water, a pint bottle full at least.

II. THE SAND DUNES.

1. Look for the line which divides the vegetation of the marsh from that of the dunes. What plants grow on both sides of the line?

NOTE. — Collect specimens of the plants that grow on both sides of the line, and bring them to school for laboratory study.

2. What plants seem to get the first firm hold in the new sand-hills? Observe carefully the advance line of the dunes.

3. What efficacy have the marsh plants in retarding the drifting sands?

4. Where is the greatest variety of plants found, in the marshes or on the dunes? Determine by actual count.

5. Make a special study of the cactus; collect specimens of the entire plant.

6. What adapts it to the dune rather than to the marsh? Compare with the pond-lilies — root, leaf, stem, flower, and fruit. [The fruit is non-poisonous.]

7. What are its methods of distribution?

NOTE. — Bring ample specimens of the cactus to school for laboratory study.

8. Make diagrammatic map of the dunes between the marsh and the lake shore, and mark their ages as shown by the vegetation.

9. Note the kinds of trees growing on the dunes; compare with those growing in the swamp.

10. Note the relative ages of those on the dunes and in the swamp.

11. Study the belt of vegetation nearest the lake shore. What part does it play in the formation of the dunes inland?

12. Since the ridge of the sand is nearest the source of the sand, how does it happen that plants can gain a foothold here more easily than they do immediately inland?

13. What causes the interruptions in the shore ridge of sand?

14. Make a sketch of one of the newer dunes and show on which slope the plants gain a foothold first. Can you see a reason?

15. Which are the first woody plants to take possession of the dunes; the deciduous trees or the conifers? Is there any reason evident?

III. Animal Life

I. IN THE SWAMP.

1. What forms are provided for largely by the plant life of the swamp?

2. What peculiarities of structure enable some forms to take advantage of both land and water in the swamp?

3. Are these same forms to be found on the lake shore? What reasons?

4. Do any animals find it possible to take advantage of the swamp mud at the bottom of the water?

5. Are any birds attracted by the berries or dry seeds of the plants?

6. Can you see any special adaptation of this class of birds to the swamp life?

7. Are such birds permanent or temporary residents?

8. What swamp birds are songsters? Can you see any adaptation here?

9. Are there any birds that get their food from the water only? From the mud under the water? From the swamp margin?

10. Between what animal forms can you see the greatest conflict?

NOTES. — Bring to school for identification and further study specimens of the various forms found.

Fill a quart jar by immersing it and allowing aquatic plants to enter with the water. Bring to school for inspection with the microscope.

11. Are swamp conditions favorable for mammalian life?

12. Are there mammals present?

13. Are there many evidences of the past animal life of the swamp?

II. On the Dunes.

1. Which precedes, if either, the animal or plant, in the establishment of itself upon the dunes?

2. What are the adaptations required to fit an animal for dune life?

3. What birds, if any, peculiar to the dunes? What are their adaptations?

4. To what extent is the life of the birds associated with the vegetation and sand on the dunes?

5. Does the lake shore or the lake show any contrasts in bird life? What adaptations required in this area?

Note. — Collect specimens of the dune insect life, and bring to school for identification and further study.

6. Are there any traces of past animal life about the dunes?

7. Do they furnish any support for mammalian life?

8. Do you find any evidences of conflict among the different forms?

Model a map of the Dune Park region. Make a map of Chicago and environs, including all the points visited in the field trips.

1. Dunes and associated swamps.
   a. Relation to present lake shore.
   b. Building and movement of dunes; relation to wind; to vegetation. (Note: Make a sand dune in laboratory.)
   c. Source of sand supply.
   d. Currents of Lake Michigan. See current chart of Lake Michigan.
2. Use of the dunes.
3. Location of sand dune areas of the world. Account for distribution.
4. Influence of sand dunes on the industries of inhabiting people.
5. Influence of wind on bodies of water.
   a. Waves.
   b. Currents.
6. Influence of wind on distribution of vegetation; of animals.
7. Sanitary use of wind.
8. Man's control of wind as a working force.

Questions:

In what grade should the study of the winds begin?

What aspect is appreciated in the different grades?

What experiments in physics does the subject necessitate?

In what grade would you teach the use of the thermometer, barometer, and anemometer?

What is the educational value of the daily weather maps?

How use the child's interest in kite-flying, boat-sailing, balloons, and flying machines, in teaching the winds?

What mathematical problem does the right teaching of the subject demand?

What, if any, is the value of the use of such wind stories as the "Harpies," and "Story of Paw-puck Keewis" in connection with the story of the winds?

Make a list of appropriate wind stories.

What wind songs do you consider appropriate?

Write a plan for teaching the winds to any grade you prefer.

References: Weather map of the United States, Davis, *Elementary Meteorology;* Davis, *Physical Geography;* Ferrell, *Popular Treatise on the Winds;* Waldo, *Elementary Meteorology;* Geike, *Physical Geography;* Mills, *Realm of Nature;* Archibald, *The Story of the Atmosphere;* Gregory, *Elements of Physiography;* Reclus, *Earth,* p. 90.

Changes in Progress Beneath the Surface of the Earth

1. Evidences of the movement of the earth's crust in this region.
   (a) How was Stony Island formed?
   (b) Possible heights of Stony Island?

2. Mountains: (a) Appearance; (b) Location. Cause of the great mountain systems. (c) Associations. (d) Formation: by folding, by faulting, by erosions. Examples of each. Make mountain range in laboratory. (e) Use, in relation to moisture; drainage of continents; relation to distribution of plants, animals, and peoples. (f) Esthetic value of mountains.

What mountain systems have acted as fortifications for historic peoples?

How may a mountain range change from a defense for a people to a weakness?

3. Volcanoes: Visit Field Columbian Museum to see volcanic products and models of volcanoes. (a) Appearance of volcanoes, active

and inactive. Read Pliny's description of the eruption of Vesuvius. (b) Location in relation to mountain ranges. (c) Formation. Laboratory experiment in formation of volcanoes. (d) Use of volcanoes. (e) Influence of mountains and volcanoes on the mythology and religious beliefs of primitive peoples. Location of noted sacred mountains.

Questions:

Can people living on a plain have an image of mountains?

How introduce a study of mountains to children of the plains?

What is the value of projected pictures over small photographs?

What is the best way of reproducing in miniature the processes of mountain-making?

Make a reading list for children on the subject considered during the month.

Write plan for teaching the subject to any class you may choose.

References: Scott, *Introduction to Geology*, pp. 332–342; Dana, *Manual of Geology*, pp. 24–28, 345–371; Geikie, *Text-book of Geology*, pp. 1071–1089; Reclus, *Mountains;* Hutchinson, *The Story of the Hills;* Reclus, *The Earth;* Mill, *Realm of Nature.*

History and Literature

Emily J. Rice Gudrun Thorne-Thomsen

Elementary School

The value of our work in history depends largely upon the power of the pupils to relate the life of the past to present social conditions. For this reason, in planning the course of study, it was necessary to consider at each step the basis which the pupils had gained by actual experience. The chronological order of the subject-matter is not our guide in teaching children. Observation of events and participation in certain phases of community life furnish the only material by which they can interpret historic facts. The study of the past should react upon the present and give fuller meaning to experience. It will do this when social conditions and historical ideas and events are given their proper connection in our teaching. From such an arrangement of work we may hope for a gradual growth of interest in industrial conditions and local institutions, and may cultivate habits of looking beneath the surface of things to discover their meanings.

Although first-hand knowledge is valuable at all times in the study of history, still, when the children are beginning to interpret the deeds of men, it is especially necessary that they should have material furnished by the immediate environment. This material may be found in the industries of the community, in local institutions, and in current events. From these we have selected, for special emphasis this quarter, the visit to a farm made by the entire school in October, and the presidential election. It is not intended that these shall be studied to the exclusion of those institutions which were made the basis of the course of study for each grade; these topics are to be considered because they are of especial interest at the present time, and considered by each grade in such a way as to aid the regular history work.

The trip to the farm has given the little children an opportunity to see the connection between the home and the farm, the source of some of the common foods, and the labor by which this food is produced. The methods of transportation of food to the city, and its distribution, with kinds of work and amount of labor involved, may also be considered.

In the middle grades, the children will compare an Illinois farm with one in New England and one in Virginia, and the work done now on the farm with that done in Colonial times. This involves the change from the home period of industry to the factory system.

The interest in the presidential election will be used in the higher grades to facilitate the organization of the pupils for their own government. The children will compare their methods in the election of officers with those used by the country in the election of its President. It also furnishes a good foundation for the study of the critical period of our history.

For the history work of each grade, see outline by the grade teacher. The general plan was given in the October number of the COURSE OF STUDY.

Secondary School

It was found after examining the students entered in Tenth and Eleventh Grades that, with few exceptions, they had not studied Ancient History. It was therefore thought advisable to let them all begin the study of ancient times, the Tenth and Eleventh Grade pupils proceeding more rapidly, if capable of doing so.

For the month of October the subject of study was Primitive Culture. The students were presented with the conditions of man on earth before he had any home, clothing, fire, or tools to work with. They traced man's development through savagery, barbarism, and the half-civilized stages, seeing how slow the improvements were, and how man adapted the material at hand to his needs.

From a relief map they studied the structural and climatic conditions of the continents with a view of finding out what advantages and disadvantages they presented to the development of primitive man. The great differences in the progress of the peoples inhabiting different parts of the globe were thus partly accounted for. As their subsequent study was to be Egypt and Greece, the geography of Eurasia was considered and compared with that of North and South America. Why did man attain a higher development in Eurasia, and more particularly in the countries grouped around the Mediterranean Sea, than in North America? This problem led to a study of the isolated areas of Eurasia, with their extensive coastline and protective barriers. The students also considered the peculiar advantages afforded by the great flood plains to a primitive culture, as, for example, the Nile Valley, and that of the Euphrates and Tigris.

By this geographic study the students were impressed with the fact that man's progress has been dependent on and limited by the conditions of his environment. They have begun, probably, to appreciate the inborn longing of man for better things, his patience and perseverance in working them out; also what thanks are due to the unknown, nameless thinkers and workers of the past.

The materials for study books and pictures were found in our library, but objects seen on the visit to the Field Columbian Museum were still more useful.

The students were assigned topics for investigation, and the recitation time was used by them to give to the class the results of their inquiry and to discuss these results and their significance. Wherever drawing would make an idea clearer or show the pupils where their knowledge lacked accuracy, this mode of expression was used. Finally, the pupils wrote a paper on this subject embodying the main features of the work; these papers were criticised from the standpoint of thought matter as well as from that of composition and language.

Work for November—Ancient Egypt: After having gained some conception of the de-

velopment of man from savagery to the half-civilized stage, the pupils studied Egypt in order to investigate the oldest civilization, which has influenced more or less directly the onward movement of our race.

The progress and early civilization of Egypt is intimately connected with its geography, and an understanding of the physical condition of the country is therefore essential. The following topics were considered :

The Nile; characteristics of its flood plain. Cause of the inundations and the consequent fertility of the soil.

Irrigation; the "shaduf" and the "sakieh." Appearance of the Nile valley compared with surrounding deserts.

Climate and products of the Nile valley. Characteristics of the Nile valley reflected in development and history of the people.

Settled agricultural life encouraged. Large co-operative undertakings necessary, resulting in social and political organization. Protection against invasion by desert and sea, and consequent continuity of Egyptian history. Easy communication between parts of the country. Effect of monotonous agricultural life on the people. Scientific studies engaged in for the purpose of controlling the river, such as astronomy, engineering, etc. Relation between the religious beliefs of the people and geography of the country.

Did the isolated condition of the Nile valley always prove a benefit to the Egyptian people?

Did the geography of the country present favorable conditions for the building up of a great nation?

The pupils made maps of the country first in sand and then on the board. They were then taken on an imaginary trip up the Nile in order to awaken in them a genuine interest in Egypt. Descriptions, pictures, and stereopticon views were employed to give them a vivid image of the country as it is to-day, its people, and present social and political conditions. The monuments and objects of industrial and fine arts seen on the trip aroused a great many questions, which led to a study of Ancient Egypt. For the sake of economy and more effective work, the class was organized into groups, each group selecting a certain topic for investigation. The reports given by these groups formed the basis of discussion in the recitations. Topics considered by the class:

Organization of Egyptian society; power invested in the king; division into priests, nobles, common people, and slaves.

Characteristics of Egyptian civilization. Political, social, moral, and religious ideas of the people; their occupations and customs.

Architecture, the pyramids, tombs, temples, etc.; their artistic merit. Peculiarities of Egyptian construction. Use of color.

Literature and science. Variety of Egyptian literature.

Different forms of writing; inscriptions on the monuments and in the tombs.

The principal events in the history of Egypt.

Books. All the students are provided with a general history. In the library:

References: Fisher, *Outlines of Universal History;* Tillinghast, *Universal History;* Sheldon, *General History;* Wilkinson, *Ancient Egyptians;* Philip Smith, *Ancient History of the East;* Dunker, *History of Antiquity;* Thalheimer, *Manual of Ancient History;* Ebers, *Egypt;* Cameron, *Egypt in the Nineteenth Century;* Amelia Edwards, *A Thousand Miles Up the Nile;* Penfield, *Present Day Egypt;* Maspero, *Dawn of Civilization;* Chipiez and Perrot, *History of Ancient Egyptian Art;* Amelia Edwards, *Pharaoh and Fellah;* Reber, *History of Ancient Art;* Birch, *Ancient Pottery;* Viollet-le-Duc, *Habitation of Man;* Fergusson, *History of Architecture.* Not in the library: Ebers, *Uarda, Homo Sum, Bride of the Nile.*

Work for December — The Homeric Age: As was the case with Egypt, a study of the geography of Greece is necessary in order to understand its history.

GEOGRAPHY. Position of Greece with regard to other countries. Indented coastline and numerous islands; effect on navigation. Natural division of the country; effect on the formation

of states. Differences in surface between parts of the country; effect on the development of the people, their occupations, character, and customs.

How would the division into many independent states affect the history of the Greek people? Advantages and disadvantages? Compare geography of Greece with that of Egypt. How are these geographic differences reflected in the civilization and history of the two nations? What natural advantages did Greece offer for the development of an early civilization?

The method of study is similar to the one indicated in the outline of work on Egypt. There will be an imaginary visit to the ruins of Tiryns and Mycenæ by the aid of descriptions and pictures. The pupils will study about the Homeric Age in their own text-book, Botsford's *Greece*, and will also be referred to the material at hand in the library. The study of the Iliad will be a necessity, as it will throw light on many questions and give a picture of the state of society in prehistoric Hellas. Subjects for study:

Organization of society: Power of the king, on what it was based; of the council of elders; of the general assembly. Classes of people: nobles, freemen, slaves; condition of each class.

Character and customs of the people; their home life and occupations. Their moral and religious ideas.

Construction of palaces and houses.

The Iliad as a character study; the characters of Achilles, Hector, etc.

The influence of the Iliad upon Greek life and ideals.

Its literary value and place in the world's literature.

Greek mythology.

References: Mahaffy, *Old Greek Education;* Church, *Pictures from Greek Life and Story;* Curtius, *History of Greece;* Guerber, *Story of the Greeks;* Christopher Wordsworth, *Greece;* Coulanges, *The Ancient City;* Von Falke, *Greece and Rome;* Guhl and Köner, *Life of the Greeks and Romans;* Mahaffy, *Old Greek Life; Dictionary of Greek and Roman Antiquities; Iliad,* Homer, translated by Bryant; Menatt, *The Mycenæan Age.*

American History in Twelfth Grade

Channing's *Student's History of the United States* is used as a text-book by the class.

The geography of the country was studied from physiographic maps. The students first considered the necessities of primitive people in the hunter, shepherd, and early agricultural stages, and then tried to discover how the geography of America is adapted to be the home of people in each of these stages. The following questions were discussed:

Advantages and disadvantages of the tropical forest regions; of the temperate forests; of the Cordilleran regions; which offered the best conditions for the development of civilization, and why; aboriginal tribes occupying each region and their stage of culture; parts of the Old World which offered the best conditions and had the earliest civilizations; continents best adapted for the development of early civilizations; animals and plants of America as compared with the Old World, and effects of these upon aboriginal life.

This preliminary work led the pupils to inquire into the topography of the country — its temperature and rainfall — and prepared the way for the study of Channing's chapter on *Geography*. Payne's *History of America* (Vol. I) is especially valuable for this work.

The pupils next considered the adaptability of the country to European people, using Channing's *Introduction* and references as a basis. Each student was required to investigate a special topic and give the results of his work to the class. They drew maps showing important points in the structure of the country.

Under Discovery and Exploration individual students investigated the following topics:

Geographical ideas of Homer and Herodotus; of Plato and Aristotle; of Pomponius Mela and Ptolemy. See Bunbury's *History of Ancient Geography*, Tozer's *History of Ancient Geogra-*

phy, Payne's *History of America* (Vol. I), and Fiske's *History of America* (Vol. I).

Norse Discoveries: effects of the Crusades; lines of trade to the East; Venice in the Middle Ages; Marco Polo and Mongol rule in Asia; the Turks and loss of lines of trade. See Winsor's *Narrative and Critical History* and Winsor's *Columbus*.

Portuguese voyages; Spain and the Moors; Toscanelli; Columbus; Cortez and the Aztecs; Pizarro and the Incas; Champlain and French ideas of colonization; Raleigh; the Spanish Armada and its results. References in Channing's *History* and *Guide to American History*.

The pupils used wall-maps in the school collection which show the growth of geographical knowledge, and also drew maps for their own use.

Lowell's *Columbus* and Tennyson's *Columbus* were read in class recitation. For other literature, see Miss Fleming's plan for Oral Reading.

In Colonial History we studied especially Massachusetts, Virginia, and New York as typical colonies of the different sections of the country. Our work followed two lines, one tracing the development of English ideas in this country and the other the effect of environment in shaping the growth of our institutions. The following topics suggest the order of work: Cause of settlement; character of colonists; geography of country occupied; influence of geography upon occupations; influence of occupations upon social life; government established; colonial industries; present economic conditions compared with those of colonial times.

In December, our subject will be the Revolutionary struggle. By study of the writings of the "fathers" we shall seek to discover the political ideas which animated them, and shall then compare those ideas with the political theories of our own time. Reading of Locke's second treatise on *Civil Government* will be made the foundation for this study.

Professional Class

The work of the professional class for this quarter is confined to preparation for teaching in the first three grades. This involves a careful study of the subject-matter, the adaptation of this subject-matter to the children, and such hand-work as will enable the students to teach the primitive industrial arts. They are working in clay-modeling and pottery, in spinning with the spindle and distaff and with the wheel, and in weaving with the simple hand loom, and they are making a loom of wood. They are also experimenting with stone tools, and later will undertake some work in metals.

References: Mason, *Origins of Invention* and *Woman's Share in Primitive Culture*; Joly, *Man before Metals* (especially good for the study of the Cave Man); Starr, *Some First Steps in Human Progress* and *Indian Life*; Morgan, *Houses and House Life*; Viollet-le-Duc, *Homes and Habitations of Man*; Keller, *Lake-Dwellers of Switzerland*; Figuier, *Primitive Man*; Dawkin, *Early Man in Britain* and *Cave-Hunting*; Evans, *Ancient Stone Implements*; Nadaillac, *Manners and Monuments of Prehistoric Peoples* and *Prehistoric America*; Morgan, *Ancient Society*; Tylor, *Primitive Culture*, *Early History of Mankind and Anthropology*; Ratzel, *History of Mankind*; Lubbock, *Prehistoric Times*; Rau, *Early Man in Europe*; Waterloo, *Story of Ab*; Butterworth, *Industrial Arts*; Hale, *Stories of Invention*; Parton, *Captains of Industry*; Knight, *Mechanical Dictionary*; Bigelow, *Useful Arts*; Lodge, *Pioneers of Science*; Hammersley, *Book of Illustrious Mechanics*; Chase and Blow, *Stories of Industry*.

Home Economics

Alice Peloubet Norton

The principle on which a course of cookery is based will vary with the object of the course, the age of the pupils, and their surroundings and interests. Whether the order is determined by the study of the food principles, by the different methods of cookery, or whether some other grouping is chosen, the work must be carefully adapted to the class. With the younger pupils the most logical course is not always the best. It is important to furnish a motive for the work which will give real interest in the beginning, and arouse the desire for investigation and experiment on the part of the child. With older pupils, as in the normal class, there is generally a strong motive present or the work would not be undertaken.

With the Fifth Grade children, who are studying the early colonization of the country, the native fruits and grains of the eastern coast have furnished a starting point. In the Seventh and Eighth Grades the motive was found in the preparation of a simple Thanksgiving luncheon to be served in French fashion, the pupils who act as waiters speaking French only.

In the other grades the work is in close connection with the nature study, beginning with fruits and cereals.

It was thought best at first that the training class should follow somewhat closely the order of work in the grades, but it was found better to give an independent course, and to take the preferred order of proteid before starch, instead of that indicated in November.

After the study of water and mineral matter the outline is as follows:

V. Proteids.

Composition. Use in body as tissue builders and as fuel foods. Discussion of reason why other fuel foods are needed. Testing of proteids with Millon's reagent, and with nitric acid and ammonia. Allied nitrogenous compounds: gelatine, extractives. Examination and testing of dried gluten previously obtained from flour. Other vegetable proteids, as legumin of peas and beans. Casein precipitated from milk by acid; making of sour-milk cheese. Casein precipitated by rennet, and the making of cheese curd and of junket.

Experiments with albumen, to determine its solubility in water, and its cooking temperature. Cookery of eggs; dropped, creamy, and in omelet.

VI. Fats.

Source. Comparison of animal and vegetable fats as to composition, cost, digestibility. Use in body as fuel. Effect of cooking on digestibility. Fat obtained from milk; churning of butter.

VII. Starch.

Composition; source; value as food; test. Digestibility of starch from different sources. Examination under microscope of starch grains from potato, corn, wheat. Effect of heat, as in popped corn. Effect of different degrees of heat conveyed by means of water. Comparative study under microscope of starch mixed with cold water, starch and water heated to 60° C.; starch and water boiled. Boiling of potato and rice, weighing each before and after cooking. Cookery of cereals.

VIII. Change of starch into sugar.

Change of starch into sugar by means of prolonged heat; by acid; by the action of saliva. Testing of different foods for sugar with Fehling solution. Test applied to cane sugar before and after heating with acid. Classification of carbohydrates. Sugar cookery.

The classification of foods given below is adapted from Goodfellow, and is chosen because of its simplicity. "Albuminoid" unfortunately is used in two senses by different authors, so that "gelatinoid" seems less confusing to the beginner.

Classification of Foods

Inorganic (incombustible).
1. Water.
2. Salts or mineral matter.

Organic (combustible).
1. Nitrogenous.
   (a) Proteids.
   (b) Gelatinoids.
2. Non-nitrogenous.
   (a) Fats and oils.
   (b) Carbohydrates.

The more important carbohydrates may be grouped as follows:

1. Glucoses ($C_6H_{12}O_6$).
   Dextrose.
   Levulose.
   Galactose.
2. Sucroses ($C_{12}H_{22}O_{11}$).
   Cane sugar.
   Lactose, or milk sugar.
   Maltose, or malt sugar.
3. Starches ($(C_6H_{10}O_5)_n$).
   Starch.
   Glycogen.
   Dextrin.
   Cellulose.
   Gums.

References: F. L. Sargent, *Corn Plants*, Houghton, Mifflin and Co.; Halliburton, *Essentials of Chemical Physiology*, Longmans, Green and Co.; J. E. Peabody, *Laboratory Exercises in Anatomy and Physiology*, Henry Holt and Co.; *Rumford Kitchen Leaflets*, Nos. 7, 8, 9, 10, 11, 12, Rockwell and Churchill Press; *American Kitchen Magazine*, Vol. VII, p. 66, Home Science Publishing Company; Mary Hinman Abel, *Sugar as Food*, Farmers' Bulletin, No. 93, United States Government Bulletins.

Cooking in the Primary Grades

Flora J. Cooke

During December the children will study sugar. In the Fourth Grade they will find out where and under what general conditions sugar-cane, beets, and sugar-maple trees grow, and something of the different methods used in obtaining sugar from these sources. As aids in this work they will use selected library books and pictures, museum specimens, and simple experiments as indicated below. Each child will take some phase of the subject to investigate, and will summarize what he is able to find out upon his particular topic into some suitable form for presentation to his class.

This work will be supervised by the teacher and whenever possible the data thus gathered will be printed in the form of reading lessons for the class. Each reading lesson will be illustrated according to the taste of the one preparing it, his motive being at all times to make his points perfectly clear to his audience.

Some of the topics selected will probably be the planting, irrigation, fertilizing, and manufacture of sugar; the properties and characteristic uses of the different varieties of sugar; the study of recipes for the making of appropriate candies with and without heat.

A group of children will prepare a set of sugar samples for the museum illustrating stages of development in different kinds of sugar. These will be properly labeled and catalogued according to the information gained by the group during the month.

Another group may record their experiences in the uses of sugar in the preserving and seasoning of food. The exact phase of the work chosen will depend upon the interest, experience, and abilities of the children who must do the work. The cooking for the month will be confined to the making of simple candies for the Christmas reception. A record of all the experiments and investigations will be kept in the cook-books for reference and future use. The desire of the children to make good candy will sufficiently stimulate them to measure quantities accurately, and will require a continual exercise of each child's reasoning powers in the judging of temperatures, consistencies, and the proper conditions in cooking. After appropriate directions have been given, each child will make his own observations and work out his individual problem independently.

The experiments will depend entirely upon the questions of the children as they fail or succeed in their work. They will probably discover caramel and carbon in this work, and note the changes which take place in sugars when subjected to the action of heat. Simple experiments in the dissolving of sugar, evaporation of water, and conditions for crystallization will be performed by the children if they are necessary as explanation for the results observed. For the reasons stated above the exact experiments cannot be foretold.

The following is a list of reference books used in the study of sugar:

REFERENCES

Teacher's List

A Century of Sugar Making in Louisiana. Century Magazine, v. 13, p. 100-120.

Church—*Sugar* (see *History of Food*, p. 31-34). Chapman & Hall.

United States Department of Agriculture—*Sugar* (see Yearbook, 1898, p. 566-71).

Colorado—Experiment Station. Bulletin, Nos. 21, 42, 46, 51.

Idaho—Experiment Station. Bulletin, Nos. 12, 18.

Illinois—Experiment Station. Bulletin, No. 45.

Indiana—Experiment Station. Bulletin, No. 68.

Iowa—Experiment Station. Bulletin, No. 37.

Kansas—Experiment Station. Bulletin, No. 94.

Maryland—Experiment Station. Bulletin, No. 61.

Michigan—Experiment Station. Bulletin, Nos. 177, 179.

New York, Cornell University—Experiment Station. Bulletin, Nos. 18, 183.

North Dakota—Experiment Station. Bulletin, No. 5.

Ohio—Experiment Station. Bulletin, Nos. 99, 115.

Oregon—Experiment Station. Bulletin, No. 59.

Pennsylvania—Experiment Station. Bulletin, Nos. 40, 47.

South Dakota—Experiment Station. Bulletin, Nos. 56, 62.

United States—Agriculture, Department of. Farmers' Bulletin, Nos. 52, 73, 79, 92, 93, 113.

United States—Representatives, House of. Document, No. 699.

Vermont—Experiment Station. Bulletin, 26, 73.

Vermont—Annual Report, No. 11.

West Virginia—Experiment Station. Bulletin, Nos. 55, 64.

Children's Reading

Carpenter, *Visit to a Sugar Plantation* (see *History North America*, p. 143-150). American Book Co.

Chase and Clow, *Sugar* (see their *Stories of Industry*, v. 2, p. 135-9). Educational Publishing Co.

Kirby M. and Kirby E., *Sugar* (see their *Aunt Martha's Corner Cupboard*, p. 43). Flanagan.

Troeger, *The Maple* (see *History of Harold's Rambles*, p. 37-43). Appleton.

Warner, C. D., *Sugar Camp* (see Cyr Fourth Reader, p. 268-75). Ginn.

Art

John Duncan

During this month our attention will be turned to the planning of the costumes and accessories of the Christmas festival, and to the designing of Christmas presents. The art work of the High and Pedagogic Schools will center during this month about the banners to be used in the Christmas morning service. The banners will be embroidered with designs illustrative of sun myths referring to the conflict of light and darkness, of the gods of warmth and life with the demons of cold and death. The stories of Osiris, and Phœbus, and Baldur, and Cuchulainn, and Michael the Archangel, will lead up to the Christian conception. And these banners

will be succeeded by a larger one illustrating the gospel story.

Our frontispiece is a sketch design for this larger banner, which will be executed in silk applique and embroidery.

The subject is the old and ever new theme of the Madonna and Child, and, whilst we follow to a certain extent the conventional planning of the picture, we have attempted to read into the old symbols a fresher meaning.

The most ancient and the newest faiths are suggested by the emblems of the rolling heavens and the world tree, the tree of life, of growth and evolution, showing forth the sustained miracle of creation, dropping its brown leaves, spreading its green ones, and forever sending out its buds. At its base are creatures wild and tame, and the hills and sea are around.

The humble primitive folk, the pioneers of the world's progress, the hunter and farmer, as well as the shepherd of the gospel story, lay their gifts at the feet of the coming man. And the civilizations of Asia and Africa and Europe, represented by the three wise men from the East, bring their contributions: Asia his philosophies and religions, his Bibles; Africa, who in Egypt set the type of ancient architecture and ornament, and in Morocco that of medieval times, brings his art, indicated here by the cathedral; and Europe, in the person of Julius Cæsar, presents his great conception of world citizenship.

The Madonna is the loving mother who looks to her boy to realize all that she has dreamed and failed to realize herself. All her aspirations are to be fulfilled in him. She it is who inspires the teacher with her own hope—the hope of a divine humanity. Athena-like, the teacher must supplement the child's vision with the mirror of knowledge, and arm his hand with the sword of skill for the conflict with the powers of darkness and dissolution, when he, like Osiris and Phœbus, and Michael the Archangel, must go forth to bring in at last the reign of gentleness and love, of peace on earth, good will to men.

Speech, Oral Reading, and Dramatic Art

Martha Fleming

The festival of the winter solstice celebrates the returning of the sun. Bound up with it are ideas of returning life, vigor, and joy. Up to this time the tide has been ebbing, now it begins to flow again. Darkness and death have been stealing on, shrouding and congealing all things. Now they begin to give way and are beaten back farther and farther by the growing strength of the sun's rays. A hope revives in us that Balder will come again. Cuchulainn awakes after his long sleep and stretches himself. Ormuzd has overcome his enemy Ahriman, Osiris is reborn; and at this season rises again the Sun of Righteousness, The Light of the World The Day Spring, The Bright and Morning Star, The Prince of Life. Christ comes to dispel the spiritual darkness of the world.

In our Christmas celebration we shall present the mythological stories in dramatic form, bringing out their substantial identity and spiritual unity, and showing that they answer a need of the human heart for some outward expression of its desire for life more abundant and a reassurance that life ever follows death. These early myths are prophecies, the dawn before the sunrise.

The children in costume and in procession will tell the stories and explain the emblems on the banners, which are embroidered with appropriate devices—the attributes of the gods and ornaments significant of the legends. This will be followed by the angels' songs of the first Christmas, and the story of the nativity of Christ, from St. Luke, Chapter II, verses 8 to 20, inclusive, and the Christmas hymn. Then will come a masque which will embody the ideas underlying the design of the Christmas banner, the heritage of thought and skill from the past, our hopes for the future, and our faith in the divine possibilities of every child.

During the next half-hour the parents and friends will examine the gifts made by the children. These will be arranged in the different rooms throughout the building, and when we come together again it will be around the Christmas tree, to sing the Christmas songs and tell of the Christmas customs in this and other lands.

In addition to the special work demanded by preparation for the Christmas celebration, the regular work in speech and oral reading will be continued.

This month an attempt will be made to give the interpretation of literature a definite place in the children's study and to follow it up systematically. It often happens that a great piece of literature bearing directly upon the subject of study, and of interest, is too difficult for the children to read for themselves, or even under direction: so the great thought-treasury of the world remains sealed to them unless unlocked by adequate interpretation. By means of interpretation something of the rhythm and of the beauty of thought and largeness of emotion will enter into the hearts and souls of the children. A feeling for the masterpieces of literature will be created, causing the children to return to them as to a cool spring whose waters they have once tasted. Speaking of the function of interpretation, some one has said: "You may read Hamlet or King Lear to yourself until the crack of doom and think that you understand it. Some day you hear a Booth or a Salvini speak the lines, and you have a new revelation of their beauty and significance." Dickens' *Christmas Carol* will be interpreted to the Fifth Grade. Parts will be omitted, but the story will be kept intact, and as far as the interpreter has power its beauty and spiritual truth will be presented to the children.

The following literature is suggested for the different grades as bearing closely upon their work. Some of these selections will be taken in each grade for drill.

Literature

First Grade: Study of Christmas in other lands and dramatic celebration of the different Christmas festivals.

The Birth of Christ, St. Luke, Chapter II, 8 to 20, inclusive.

Poems: *The Christmas Tree; The Tour of St. Nicholas; A Visit from St. Nicholas; Winter-time*, by Robert Louis Stevenson.

Second and Third Grades: Story of the Shepherd Dog, adapted from *Far from the Madding Crowd*, by Thomas Hardy; The Birth of Christ, St. Luke, Chapter II, 8 to 20, inclusive; The Three Wise Men and The Nativity, from *Ben Hur*, by Lew Wallace; *The Little Leaf*, Beecher; Dramatization of *Wild Animals I Have Known*, Seton-Thompson.

Fourth Grade: In addition to the work suggested for the Second and Third Grades Dickens' *Christmas Carol* will be read to the children.

Fifth Grade: *A Christmas Carol*, also *The Natural Bridge in Virginia.*

Sixth Grade: *The Demon of the Matted Hair*, and other stories from Hindoo myths; *The Pipes at Lucknow*, Whittier; reading and dramatization from *The Jungle Book*, Kipling.

Seventh and Eighth Grades: Continue *Horatius at the Bridge;* Cicero's *Oration Against Catiline;* begin the study of Julius Cæsar; *The Flight of Nydia*, from *Last Days of Pompeii*, Bulwer Lytton; *One Who Lived Long*

Long Ago, from *Giovanni*, Mrs. Frances Hodgson Burnett.

Tenth and Eleventh Grades: The Iliad as a whole will be presented to these grades, partly through the teacher's interpretation. Should the conditions be favorable, the Parting of Hector and Andromache will be studied for oral reading. Scenes from Racine's *Andromache* also may be studied. This class will continue the study of *As You Like It*.

Twelfth Grade: In connection with the study of American History the following literature is suggested for oral reading:

Miles Standish, Longfellow; *Paul Revere's Ride*, Longfellow; *Grandmother's Story of Bunker Hill*, Holmes; *Ballad of Cassandra Southwick*, Whittier; *Snow Bound*, Whittier; *Extracts from Hugh Wynne*, Weir Mitchell; continuation of the study and interpretation of *Hamlet*.

In the High School and Pedagogic Class each pupil will be required to present a short poem, a scene from a drama, or a prose selection to the class, the interpretation to be the result of his own study. In addition to this the Pedagogic Class will continue the study of spoken English, making special study of the child's methods of learning to speak.

The power of speech, facility and ease in utterance, and the habit of self-expression are necessary to free thinking, to distinct and vivid images. Expression clears the mental and moral atmosphere and makes for sanity and peace. The children and students have, through their efforts at self-expression in the class-room and morning exercises, discovered their own limitations and difficulties, and are ready for drill and study that will give them more freedom and effectiveness in speech. A person defective in any of the machinery by which thought is expressed orally, no matter how beautiful his thought nor how intense his desire to communicate with others, must fail in proportion as the organs of vocal utterance are defective or badly used.

Speech is a conventional language. Each child learns the language that he hears at his mother's knee by mere imitation. The mother tongue, whatever it may be, is what he brings to school. He has mastered its technique. If his speech is faulty, the first step in correcting it must be the hearing of correct speech; the second, the imitation of this speech. There is an accepted standard of English, the language spoken by our best educated people, and it is the aim to do away with provincialisms whether of the north, east, south, or west, and to make the speech conform to this standard. The dictionary is simply a record of the best usages, and after children are able to hear the different sounds and reproduce them the dictionary will be used as a help in pronunciation. The ear must become accustomed to correct sounds before the tongue can utter them. Professor Bell's vowel and consonant tables with key words are inserted, and after the sounds themselves have been learned from the living teacher these tables will be of great help. The vowels require the utmost precision of mold, because the slightest change in shape changes the quality of the sound. The consonants require accuracy, strength, and quickness in the use of the organs. Bad functioning of the organs often produces defective speech. A rigid jaw produces hard, set speech and an uncontrolled jaw loose, indefinite speech; an inflexible tongue, thick utterance; immobile lips, an indifferent expression; unresponsive cheeks, an inane sort of drawl. These difficulties are easily cured if there be no organic defect. There is no need that the deformity should be carried through life. Exercises for flexibility and control, difficult combinations and alliterations will be practiced until the vowels are given full value, and consonants are touched lightly and definitely. In this training we shall come into close touch with each child, and be able to help him over the difficult places.

In the following table are enumerated some of the causes of speech defects:

Table of Speech Defects

PREPARED BY MARTHA FLEMING

Class——

Name

General Health

Condition of Hearing

Action of Jaw and Lips and Tongue

Height of Palate

Width of Palate

Do the Teeth close properly? Are there other dental irregularities?

Cleft in Palate

Muscular Action of Pharynx in *k, g, ng*

Mouth Breathing

Condition of Tonsils

Adenoid Growths

Width of Nostrils and Bridge of Nose

Tongue-tie. Length of stretched tongue from distal end of frenum to tip

Are *t, d* and *n* articulated with tip of tongue?

Are there signs of baby talk?

Is there any hesitation or stammering?

Are there any incorrect habits of speech that the foregoing do not account for?

Wherever a defect is noticed special study will be made of the child, and when necessary individual training will be provided. Many defects can be remedied by care and practice, while others may call for the help of the dentist or surgeon. It is especially important that the little children should not be made self-conscious and unhappy by examinations, and undue attention to defects. They must remain as unconscious of themselves and of the speech organs as when lisping their first words at their mother's knee.

The function of speech is to communicate with others, to arouse thought by means of the spoken word. Under this impulse, which is the real oratorical impulse, little children speak out. They speak for a purpose. But in the artificial environment of the school-room the power is very soon lost. Even in ordinary conversation outside of the school-room sounds and syllables are slurred or run together in a manner which becomes utterly unintelligible a few feet away. Such mumbling is in most cases the result of inattention and neglect.

From the beginning the children should be trained to speak out, to give to the whole room what they have. They should be made to feel in every recitation that it is of interest not to the teacher alone, but to the whole room, and that it must be given to all. This does not mean that the voice should be strained by loud speaking. Clearness and distinctness of utterance and concentration and intensity of tone will carry the voice where loud and big sounding tone utterly fails. The simple habit of recognizing the rights of others, and of facing and addressing those to whom they speak, will go a long way toward bringing about distinct utterance. Children should learn to talk to others before they are asked to read orally.

BELL'S TABLES

VOWELS

1, eel. 14, pool.
2, ill. 13, pull.
3–1, ale. 12–14, pole.
4, ell. 11, Paul.
5, shall. 10, on, doll.
6, earl; 7, ask; 8, art; 9, up.
8–1, isle; 8–14, owl; 11–1, oil.
y 14, you.

CONSONANTS

	BREATH.	VOICE.	NASAL VOICE.
Lips	*p*,	*b*,	*m*.
	wh,	*w*.	
	f,	*v*.	
Point of tongue	*t*,	*d*,	*n*.
	s,	*z*.	
	th^2,	th^1.	
	r^2,	r^1.	
	l^2,	l^1.	
Top of tongue	*sh*,	*zh*.	
	y^2,	y^1.	
Back of tongue	*k*,	*g*,	*ng*.
	h,	glide *r* (–*r*).	

CONSONANT COMBINATIONS

j or soft *g* . . . . . *d, zh*.
Long *u* . . . . . y^{14}.
ch . . . . . *t, sh; sh, k*.
qu . . . . . *kw*.
ph . . . . . *f*.

x . . *z*. / *gz*. / *ksh*. / *ks*.
c . . *s*. / *k*. / *z*. / *sh*.

Use of Bell's Vowel Table with Webster's Dictionary

ā, long, as in āle, fāte, chāmber, grāy = 3–1.
ă, short, as in ădd, făt, hăve, răndom = 5.
ē, long, as in ēve, mēat, pēace, sēizure = 1.
ĕ, short, as in ĕnd, mĕt, chĕck, lĕopard = 4.
ī, long, as in īce, fīne, mīre, thrīve = 8–1.
ĭ, short, as in ĭll, fĭn, admĭt, trĭbute = 2.
ō, long, as in ōld, nōte, lōaf, depōse = 12–14.
ŏ, short, as in ŏdd, nŏt, tŏrrid, resŏlve = 10.
ū, long, as in ūse, tūbe, lūte, feūdal = y14.
ŭ, short, as in ŭs, tŭb, bŭt, stŭdy = 9.
y, long, as in flȳ, stȳle, skȳ, edifȳ = 8–1.
y̆, short, as in cy̆st, ny̆mph, ly̆ric, aby̆ss = 2.

OCCASIONAL SOUNDS. 1.

â, as in âir, shâre, pâir, beâr = 4.
ä, Italian, as in ärm, fäther, fär, pälm = 8.
å, as in åsk, gråss, dånce, brånch = 7.
ą, broad, as in ąll, tąlk, hąul, swąrm = 11.
ạ, like short o, as in whạt, wạnder, wạllow = 10.
ê, like â, as in êre, thêre, hêir, whêre = 4.
ę, like long a, as in ęight, prey, obey = 3–1.
ē, as in ērmine, vērge, prēfer = 6.
ĭ, like long e, as in pĭque, machĭne, polĭce = 1.
ĭ, like ē, as in ĭrksome, vĭrgin, thĭrsty = 6.
ȯ, like short u, as in ȯther, dȯne, sȯn, wȯn = 9.
ǫ, like long oo, as in prǫve, dǫ, mǫve, tǫmb = 14.
ọ, like short oo, as in bọsom, wọlf, wọman = 13.
ô, like broad a, as in ôrder, fôrm, stôrk = 11.
o͞o, as in mo͞on, fo͞od, bo͞oty = 14.
o͝o, as in wo͝ol, fo͝ot, go͝od = 13.

OCCASIONAL SOUNDS. 2.

ụ, preceded by r, as in rụde, rụmor, rụral = 14.
ụ, like short oo, as in bụll, pụt, pụsh, pụll = 13.
û, as in ûrge, bûrn, fûrl, concûr = 6.
e, *i*, *o* (Italic) mark a letter as silent. Fall*e*n, tok*e*n, caus*i*n, mas*o*n.

REGULAR DIPHTHONGAL SOUNDS.

oi, or oy (unmarked), as in oil, join, moist, oyster, toy = 11–1.
ou, or ow (unmarked), as in out, hound, owl, vowel = 8–14.

CONSONANTS.

ç, soft, like s sharp, as in çede, çite, merçy, acçept = s.
ȼ, hard, like k, as in ȼall, ȼoncur, suȼcess = k.
ch (unmarked), as in child, much, touching = t, sh.
ch, soft, like sh, as in chaise, marchioness, machine = sh.

ċh. hard, like k, as in ċhorus, epoċh, distiċh = k.
ğ. hard, as in ğet, tiğer, beğin, foğğy = g.
ġ. soft, like j, as in ġem, engine, eleġy, suġġest = d. zh.
s. sharp (unmarked), as in same, yes, dense, rest = s.
ş. soft, or vocal, like z, as in has, amuse, prişon, reside = z.
th. sharp (unmarked), as in thing, breath, sympathy = th².
th. flat or vocal, as in thine, smooth, wither = th¹.
ng (unmarked), as in sing, singer, single = ng.
n. as in linger, link, uncle = n.
x. like gz, as in exist, example, auxiliary = gz.
ph. like f (unmarked), as in phantom, sylph, philosophy = f.
qu. like kw (unmarked), as in queen, conquest, inquiry = kw.
wh. like hw (unmarked), as in what, when, while = wh.

Music

Helen Goodrich Bertha Payne

The principle of working out continually through the interest of the song has been illustrated in the notation work during the past month. Drill on this point has sprung out of the rote-singing in the first five grades. The very inadequate conception of intervals in these grades led to an attempt at pointing out approximately with the hand the distances up and down, while singing; then in the first grade, to a quick placing of marks on the board with the side of a piece of chalk an inch long, following the direction and distances of the intervals up and down, in the rhythmical movement of the song. This proving still too indefinite (as shown by the results when the children were required to make the steps themselves), the staff was resorted to, with success. The more logical and exact children were aided perceptibly by the definite relations brought out on the staff. The names of the clef, and the meaning of the time-signature and bars, were asked for by the children, and these were explained to them. They will be mentioned every time there is an opportunity, until the children are familiar with them as with other new words. They will also be written upon the board.

The Second and Third Grades found much fun in one of the simplest songs in the Primer, and sang it very dramatically. One day the tune was upon the board when the lesson began. The children noticed it, and the teacher pointed to the notes, one after another, in the rhythm of the song. The children recognized it with great glee, one after another, and each one pointed it out, keeping the rhythm perfectly. Thus the time was made more definite, and with the same effort, some familiarity with the staff was acquired.

These instances are given in detail to show the general direction which the work has taken in the matter of gaining technical knowledge. Whatever is necessary in points of technique will be arrived at through the need of the moment, the need of preparing the song to please some one else, to make one's self intelligible, to render the song as beautifully as possible, if for nothing else, for the mere fun of giving a riddle to some one else. Looking toward these ends, also, the songs capable

of dramatization are acted out; a child who is especially inexpressive is invited to sing a verse of a song on *la*, without the words, and let the class guess which verse he is thinking of by the expression; a child who enunciates badly takes pleasure in trying to make the class understand by the movement of his lips a verse of a song, without making a sound.

Further attempts at developing a more beautiful and more varied sense of rhythm are being made. The Second and Third Grades quickly learned to walk in a circle to 6-8 time, and the movement was perceptibly smoother than the ordinary walk, and entirely divested of the slight jerking produced by the ordinary march. It is believed that a beautiful class of dance music, marches, and some of the best ballet-music, which will be used in the Gymnasium this month, will react favorably upon the singing.

The interest in the High School is centering around the intellectual side of the singing at present, in the consideration of text, and in a general way its interpretation by the composer. Songs have been selected which have texts of good literary quality, and sometimes historical or ethical value, and much emphasis has been laid upon these collateral interests. The dignity of singing needs to be clearly brought out among pupils of the High School age. Technical points (such as exactness of attack, which demands great concentration; correctness of pitch, involving discrimination in listening; and clear enunciation, made necessary by the value of the text) have been dwelt upon to some extent. The need of improving morning exercises has been one motive for this work.

The Statue, in Songs of Life and Nature, created interest in the character of St. Francis of Assisi in the High School, and the Twelfth Grade is preparing a morning exercise with this song as the animus. A sympathetic account of St. Francis may be found in the *Handbook of Legendary Art*, by Mrs. C. E. Clement, p. 109.

Preparations for Christmas will begin with discussions of all texts. There will be help from the Department of Oral Reading in this work, and the songs will be sung to the children in little recitals.

Special group-work will be done upon the songs mentioned under this head. A class selected from the High and Pedagogic Schools will sing the canon for women's voices by Reinecke, *Christmas Carol*, in Songs of Life and Nature.

The old English carols will be sung by a group of girls and boys costumed as "*Waits*." The plan is to keep this as far as possible a secret among the Waits themselves and to go about at unexpected times and sing to different people in the school, and perhaps otherwheres. The costumes selected are of the time of Queen Elizabeth. They consist of scant plain skirts for the girls, full-sleeved waists, with kerchief and tight-fitting caps, white cuffs, and long capes. The boys will wear full knickerbockers, broad white cuffs and collars, long capes, and broad-brimmed peaked hats. They will carry lantern, staff, and music.

Zu Bethlehem Geboren is one of the most beautiful of the multitude of beautiful German Christ-Child songs. It will be sung by the German classes. The accompaniment must be played very smoothly and the swinging rhythm carefully preserved.

The list of songs appended contains a considerable variety from which to choose, and is graded approximately, though it is of course impossible to estimate musical capacity by grades.

Singing, Pedagogic Class

This class has been gaining steadily in the production of pure tone and in breath control, and is now more ready for song study. The Christmas songs outlined for the grades will be studied. First, as types of good music; second, to discover thei suitability to the children in text and music; third, as a point of departure for the mastery of truer expression by the students themselves.

I. METHOD: The class will be divided into two groups. Each group will assist the other by suggestions. The song will be sung by one group. The members of this same group will criticise their own performance, and then sing again. The listening group will offer its suggestions, which will be acted upon if accepted. Then the listening group will take its turn in singing. This gives not only a reasonable drill in technique, but also gives training in the kind of discrimination needed in teaching or in leading children's singing.

II. POINTS FOR DISCRIMINATION: (1.) Enunciation and pronunciation. Watch the formation of the perfectly molded vowels. The consonants at the beginning of words are apt to be prolonged, spoiling the tone and the vowel form. The premature anticipation of the closing or final consonant has an equally bad effect.

(2.) Attack: Hold the true image of the pitch of the tone before sounding it. Command of breath-stream from the diaphragm will help to relieve throat-tension that comes at first when one strives for a perfect attack of the tone.

(3.) Connection of tones: One great defect in most singing is the slurring of one tone up or down to the next, sliding over the interval. A great beauty is secured when the breath-stream flows steadily, words are spoken easily, and even tones are joined closely as may be, with no suspicion of dragging up or down from one pitch to the next. All these good habits once formed, the channels are opened for beautiful expression.

Songs

Kindergarten: *Christmas Song*, Frederic W. Root, December COURSE OF STUDY; *Green Holly Boughs*, Songs for Little Children, No. 2, Eleanor Smith; *In Another Land and Time*, Songs for Little Children, No. 1, Eleanor Smith; *Story of the Christ, Christmas Lullaby*, and *Jack Frost*, Song Stories for Kindergarten, Patty Hill; *The Snowflakes*, Songs of the Child World, Mrs. Gaynor; *Jack Frost*, Songs for Little Children, No. 1, Eleanor Smith.

First, Second, and Third Grades: *Christmas Song*, Frederic W. Root, December COURSE OF STUDY; *Green Holly Boughs*, Songs for Little Children, No. 2, Eleanor Smith; *In Another Land and Time*, Songs for Little Children, No. 1, Eleanor Smith; *Old Christmas*, Modern Music Series, Second Book, Eleanor Smith; *Father Christmas*, Modern Music Series, Primer, Eleanor Smith; *The North Wind Doth Blow*, Mother Goose and Nursery Rhymes, J. W. Elliott; *Winter Time*, Modern Music Series, First Book; *This is the Way the Snow Comes Down*, Children's Songs and How to Sing Them, W. L. Tomlins; *Summer or Winter, An Explanation, A Sleigh Ride, Earth's Dresses*, Modern Music Series, Primer.

Fourth and Fifth Grades: *Christmas Bells*, Niels Gade, text by Hans Christian Andersen, December COURSE OF STUDY; *Christmas Carol*, (Old English words), Modern Music Series, First Book, Eleanor Smith; *Christmas Bells*, (text by Longfellow), Modern Music Series, Second Book, Eleanor Smith; *Ye Shepherds Arise*, Reinecke, Fifty Children's Songs; *St. Christopher*, Mrs. Crosby Adams, December COURSE OF STUDY; *God Rest You, Merry Gentlemen*, Old English, December COURSE OF STUDY; *Winter Song*, Modern Music Series, First Book, Eleanor Smith; *Old Christmas*, Modern Music Series, Second Book, Eleanor Smith.

Sixth, Seventh, and Eighth Grades: Same as Fourth and Fifth, with the addition of *Christmas Day* (text by Susan Coolidge), Modern Music Series, Third Book, Eleanor Smith, and *The Christmas Tree*, Eduard Grieg (Augener and Co. Edition).

High School: *Christmas Bells, Christmas Day*, Modern Music Series, Third Book; *Christmas Bells* (text by Longfellow), Modern Music Series, Second Book, Eleanor Smith; *Christmas Bells*, Niels Gade (text by Hans Christian

Andersen), December COURSE OF STUDY; *Christmas Day* (text by Susan Coolidge), Modern Music Series, Third Book, Eleanor Smith; *The Star of Joy, A Christmas Carol, Christmas Song, Gather Round the Christmas Tree,* Songs of Life and Nature, Eleanor Smith; *The Christmas Tree,* Eduard Grieg (Augener and Co. Edition); *In the Tempest,* Modern Music Series, Third Book, Eleanor Smith.

The Pedagogic Class will sing songs selected from the list of those taught in the Academic School.

Special Group Work: *God Rest You, Merry Gentlemen,* and *The First Nowell,* December COURSE OF STUDY; *Christmas Carol,* Carl Reinecke (text by Hans Christian Andersen), Songs of Life and Nature, and July COURSE OF STUDY; *Zu Bethlehem Geboren,* December COURSE OF STUDY.

French

Lorley Ada Ashléman

In the October and November numbers of the COURSE OF STUDY the story of the introduction of potatoes into France was printed. The children wrote a little essay upon the story, and naturally wanted to know why, in the word "pommes de terre," the first substantive, "pommes," took the mark of the plural instead of the last. A discussion on the formation of the plural in compound and simple substantives was thus initiated, and later the pupils wished to have an exercise given them to show whether they really understood the subject. The following reading lesson embodies the questions of the children and the rules arrived at in response to them. Next comes a selection concerning the departure of an Indian tribe, chosen because the children are now studying the French explorers and the Indians. In this selection, the nouns are purposely put in the singular, to test the pupil's ability to form the plural.

In November the older children studied the constellation of Berenice in connection with their ancient history and astronomy. Therefore the story of *Berenice's Hair Among the Stars* is given them.

The grammar grades will be at work preparing Christmas gifts in the Manual Training room, and their directions will be frequently given in French; they will be encouraged to respond in the same language as far as possible. For their reading, they will dramatize a French Christmas. They will talk over the French customs, write about them, and from these writings make the little play they will present.

French Reading Lesson

Robert. Mlle., pourquoi *terre* ne se met-il pas au pluriel dans le mot pomme de terre que nous rencontrons si souvent dans cette histoire; "Aventures des premières pommes de terre en France?"

Hier en parlant des légumes que nous avous vus chez le marchand nous avons écrit chou au pluriel et fleur au pluriel. Je me souviens aussi d'avoir ajouté une *S* à *chef d'œuvre* en parlant des *chefs d'œuvre* du temps de Louis XVI.

Mlle. Guinand. Robert, votre question vient apropros. Le bon sens doit décider de cette question. Voyons! avons nous une *terre* ou *deux terres?*—une n'est-ce pas? Nous avons pourtant plusieurs *pommes.* Il s'en suit que c'est le mot *pomme* qui prend la marque du pluriel. Quand un nom composé est formé de deux noms réunis par une préposition, le premier nom seul prend la marque du pluriel.

Dans le mot *chou-fleur* vous avez deux

substantifs chou et fleur, l'un qualifie l'autre. En français l'adjectif s'accorde avec le substantif. Il faut bien mettre tous les deux au pluriel. Vous écrivez donc le chou-fleur (singulier); les choux-fleurs (pluriel).

C'est clair?

Robert. Je vous comprends trés bien, Mlle. C'est á dire que si ce mot est formé de deux substantifs, dont l'un qualifie l'autre, ils prennent tous les deux la marque du pluriel.

Je puis aussi dire alors que si le mot est formé d'un substantif et d'un adjectif, ils prennent l'un et l'autre la marque du pluriel. Donc j'écris *la basse-cour* (singulier); les basses-cours (pluriel).

Mlle. Guinand. Parfaitement.

Hélène. Mais alors, Mlle., dans le cas où le mot composé est formé de deux substantifs et que l'un ne qualifie pas l'autre que faut il bien faire?

Mlle. Guinand. Voilà Hélène une petite difficulté, il vous faut analyser le mot composé.

Prenons le mot *Hôtel-Dieu;* qui signifie hôtel de Dieu (il n'y a qu'un Dieu); au pluriel des *hôtels de Dieu.* Ecrivons donc des *hôtels-Dieu.* Quand il y a des mots sous-entendus, on les rétablit par la pensée.

Colin-maillard, jeu où Colin court après maillard. Donc un colin-maillard; des colin-maillard.

Appui-main, baguette qui sert d'appui à la main. Ecrivez, un appui-main; des appuis-main.

Un pot au feu; des pot au feu (des morceaux de viande dans un pot sur le feu.

Jean, que voulez-vous savoir?

Jean. D'après votre raisonnement c'est bouchon qui prend la marque du pluriel dans le mot composé *tire-bouchon.* Le tire-bouchon; les tire-bouchons, parceque tire est un verbe.

Mlle. Guinand. Bravo, Jean, vous avez raison! Si le mot est composé d'un substantif et *d'un verbe,* le substantif seul prend la marque du pluriel, sans tenir compte de l'idée de pluralité contenue dans le mot composé.

Prenez la craie, Jean, allez au tableau-noir et écrivez le mot composé *un contre-ordre* au pluriel.

Jean. Voici, Mlle., un contre-ordre (sing.); des contre-ordres (plu.)

Mlle. Guinand. C'est bien, mais pourquoi n'avez-vous pas ajouté une *S* a contre.

Jean. Parceque, Mlle., contre est un mot invariable, et si j'analyse le mot je puis voir que si le mot composé est formé d'un mot invariable et d'un substantif, le substantif seul prend la marque du pluriel.

Vous n'y voyez pas encore clair, Hélène?

Hélène. Si, Mlle., pourtant je voudrais bien faire quelques exercises sur la formation du pluriel des noms composés, malheureusement je ne comprends pas encore bien les règles pour la formation du pluriel d'un substantif en Français. Veuillez, Mlle., nous les indiquer. Alors vous nous ferez faire un devoir sur la formation du pluriel des substantifs et un autre exercise sur la formation des noms composés.

Mlle. Guinand. Jeme rappelle, Hélène, que vous étiez absente la semaine passée. Nous avons étudié ces règles à l'occasion de notre course au marché "South Water."

Robert, veuillez bien expliquer ces règles à Mlle. En attendant et tout en vous écoutant j'essayerai de mettre les devoirs sur le tableau-noir.

Robert. A votre service, Mlle. Je ferai de mon mieux.

I. On forme le pluriel d'un mot, en ajoutant un s au singulier.

Ex. Le père, les pères.

II. Les noms terminés au singulier par s, x, z, ne changent pas au pluriel.

Ex. Le fils, les fils; la voix, les voix; le nez, les nez.

III. Les noms terminés au singulier par *au, eau, eu,* prennent un x au pluriel.

Ex. Le noyau, les noyaux; le bateau, les bateaux.

IV. Sept noms terminés au singulier par *ou* prennent aussi *x* au pluriel; ce sont: bijou qui font au pluriel bijoux; caillou, cailloux; chou, choux; genou, genoux; hibou, hiboux; joujou, joujoux; pou, poux.

Tous les autres noms en *ou* prennent une s au pluriel: Un clou, des clous; un verrou, des verrous.

V. Les noms terminés au singulier par *al* changent au pluriel *al* en *aux*.

Ex. Le mal, les maux; le cheval, les chevaux.

Cependant quelques noms en *al* prennent tout simplement une *s* au pluriel; ainsi: le bal, les bals; le carnaval, les carnavals; le chacal, les chacals.

VI. Les noms terminés au singulier par *ail* changent au pluriel *ail* en *aux*. Ex. Le bail, les baux; le soupirail, les soupiraux.

Cependant quelques noms en *ail* prennent tout simplement une s au pluriel, tels sont; l'éventail, les éventails; le détail, les détails; le gouvernail, les gouvernails; le portail, les portails.

M'avez-vous compris, Mlle.?

Hélène. Très bien, Monsieur Robert, je vous remercie mille fois.

Départ d'une Tribu Indienne.

METTRE AU PLURIEL LES MOTS EN ITALIQUE.

A la fin de l'anné, 1831, je me trouvai sur la rive gauche du Mississippi, à un lieu nommée par les *Européen* Memphis. Pendant que j'étais en cet endroit, il y vint une troupe nombreuse de *Choctaw*: ces *sauvage* quittaient leur pays et cherchaient à passer sur la rive droite du Mississippi, où ils se flattaient de trouver un asile que le gouvernement Américain leur promettait. On était alors au coeur de l'hiver, et le froid s'évissait cette année-là avec une violence inaccoutumée; la neige avait durci sur la terre, et le fleuve charriait d'énormes *glacon*. Les *Indien* menaient avec leurs *famille;* ils traînaient à leur suite des blessés, des *malade*, des *enfant* qui venaient de naître, et des *vieillard* qui *allaient* mourir. Ils n'avaient ni *tente*, ni *chariot*, mais seulement quelques *provision* et des *arme*. Je les vis s'embarquer pour traverser le grand fleuve, et ce spectacle solennel ne sortira jamais de ma mémoire. On n'entendait parmi cette foule assemblée ni *sanglot* ni *plainte;* ils se taisaient. Leurs malheurs etaient anciens et ils les sentaient irrémédiables. Les *Indien* étaient dejà tous entrés dans le vaisseau qui devait les porter, leurs *chien* restaient encore sur le rivage: lorsque ces *animal* virent enfin qu'on allait s'éloigner pour toujours, ils poussèrent ensemble d'affreux *hurlement* et s'elançant à la fois dans les *eau* glacées du Mississippi, ils suivirent leurs maîtres à la nagé.

* * * * *

Les *chouette* et les *hibou* se tiennent cachés le jour dans les *fente* des *rocher*, dans les *cavité* des vieilles *muraille*, ou dans les *trou* qu'ils creusent aux-mêmes, enfin dans tous les *lieu* où ils peuvent fuir la lumière.

Le vent qui fait plier les humbles *abrisseau* rompt *les chêne* superbes.

Les *enfant* préfèrent les *joujou* à tous les *joyau* du monde.

Les *coucou* pondent dans les *nid* des autres *oiseau*.

On ne met pas la pensée sous les *verrou*.

Les plus beaux *bijou* d'une mère sont ses *enfant*.

Les *cave* sont éclairées par des *soupirail*.

Les *carnaval* de Venise sont les plus brillants du monde.

Les *régal* continuels nuisent à la santé.

Quand le bouillon est gras il a beaucoup *d'œil*.

Les *ciel de lit* sont peu connus en Amérique.

Nos *neveu* nous traiteront comme nous aurons traité *nos aïeul*.

Les œil-de-bœuf de la cour du Louvre sont ornés de *sculpture*.

Il faut quelquefois réfléchir beaucoup avant de prononcer les *oui* et les *non*.

Répondez avec vérité aux *pourquoi* des enfants.

Au temps de Pâques les *alleluia* retentissent dans toutes les églises de Paris.

Les *concerto* ont été imaginés pour faire briller les grands artistes.

Les *cicerone* sont des guides qui montrent aux étrangers les *curiosité* d'une ville.

Les bons *ténor* et les bons *soprano* nous ouvrent souvent les portes du Paradis.

Les *agenda* sont de petits livres destinés à noter les choses qu'on doit faire.

Les *alto* sont des instruments à quatre cordes, plus grands que les *violon*.

Les faiseurs de *quolibet* sont *détestable*.

C'est Mazarin qui fit représenter à Paris les premiers *opéra*.

On met souvent ses meilleurs *pensée* dans les *post-scriptum*.

L'Espagne est la terre classique des *autodafé*, des *san-benito* et des *in pace*.

Le rosaire est composé de cinquante *ave* et de quinze *pater*.

Les *lazzi* sont une suite de mouvements et de gestes qui forment une action muette.

Les *fac-similé* sont l'exacte imitation d'une écriture.

Les *lazarone* sont les mendiants de Naples.

La Chevelure de Bérénice Parmi les Astres

Bérénice était la femme de Ptolémée III Evergète, roi d'Egypte.

Vers l'an 246 avant notre ère, le roi d'Egypte Ptolémée III Evergète, avait entrepris une expédition en Assyrie, sa jeune femme Bérénice, qu'il venait d'épouser récemment, s'engagea par un vœu à couper une boucle de ses cheveux et à la consacrer dans un temple, si les dieux ramenaient à Alexandrie son époux Vainqueur, la guerre s'étant terminée d'une façon heureuse et Evergète rentré sain et sauf dans son royaume, Bérénice s'acquitta envers les immortels. Au même moment, un astronome célèbre du Musée *Conon* signala une constellation qu'on n'avait pas encore observé, on s'écria que la boucle de cheveux de la reine avait été transportée au ciel et métamorphosée par la volonté de Vénus; Conon plaça la chevelure de Bérénice parmi les astres. Ce fut un grand événement à la cour à Alexandrie.

Noël *

Les cérémonies de Noël ont toujours exprimé la jouissance, et cette gaieté s'est traduite d'une façon plus ou moins originale. Le peuple a toujours chanté les Noëls, cantiques vérifiés en patois ou en langue vulgaire, et qui sont remarquables à force de simplicité et de naïveté. La valeur poétique des Noëls est presque nulle. Ils sont aussi rustiques que les bergers qui sont censés de les chanter.

Dans le midi de la France, la fête de Noël est l'objet de manifestation toutes spéciales qui rappellent singulièrement certaines usages idolâtriques.

La veille de la Noël, on ouvre la fête par le grand souper.

La table est dressée devant le foyer où petille, couronné de lauriers, la cariguie, vieux tronc d'olivier séché et conservé avec amour, pendant toute l'année, pour la triple solennité de la Noël.

Mais avant de s'asseoir à la table, on procède à la bénidiction du feu, pratique qui sent de l'idolâtrie.

* For French Christmas Song, see p. 374

Le plus jeune enfant de la famille s'agenouille devant le feu et le supplie, sous la dictée paternelle, de bien réchauffer pendant l'hiver les pieds frileux des petits orphelins et des vieillards infirmes, de répandre sa clarté et sa chaleur dans toutes les mansardes proletaires, et de ne jamais dévorer l'éteule du pauvre laboureur ni le navire qui berce les navigateurs au sein des mers lointaines. Puis il bénit le feu, c'est à dire qu'il l'arrose d'une libation de vin cuit, à laquelle le vieux tronc d'olivier répond par des crépitations joyeuses.

Puis on se met à table.

Aprés le souper on se réunit en cercle autour du foyer et on chante des Noëls jusqu'à minuit, heure à laquelle on se rend en masse à la première messe.

Pendant toute cette nuit, les pauvres sont autorisés à mendier publiquement en chantant des cantiques.

Les enfants leurs jettent par les fenêtres leur aumône dans des bourses de papier qu'on allume par un bout, pour faire voir où elles tombent.

La Veille de Noël

La scène: Une maison illuminée à deux étages.

Au premier, derrière les rideaux on voit un bel arbre de Noël.

La neige tombe.

Les chanteurs de Noël arrivent.

Trois garçons représentent les trois mages de l'Orient.

Une fillette représente la Dame de Noël.

Voici le costume des mages: Une chemise blanche, une ceinture en couleur, un chapeau fait de carton recouvert de papier blanc, culotte en toile bleu.

Ils portent de longues barbes blanches. La Dame de Noël porte une longue robe blanche bien simple, et un voile blanc.

Un chanteur tient une cloche à la main.

Il sonne (la Dame de Noël est toujours annoncée par la cloche).

Alors toute la bande se met à chanter.

Les fenêtres s'ouvrent.

Les enfants de la maison se montrent.

Ils jettent par les fenêtres des aumônes dans des bourses de papier qu'on a allumé par un bout.

German

Siegfried Benignus

The instruction of the last two months in all classes has had for its aim the acquisition of a correct pronunciation by continually illustrating the base of articulation for German vowels and consonants. As a rule, the tongue lies quietly spread in the cavity of the mouth, touching the lower incisors in front; when this is not the case, a fixed and definite position is necessary for the production of special consonant sounds, as *c*, *l*, *r*, *z;* the concave form, indispensable for English, therefore disappears, as well as the forward projection of the lower jaw and the lateral muscles on the front side of the neck; the buccal cavity is wider; the action of the lips is greater; with the vowels *o*, *u*, *au*, *ö*, *ü*, *äu*, *eu*, the lips must be pursed; with the vowels *e*, *i*, *ai*, *ei*, the corners of the mouth must be drawn horizontally backward.

Since the pronunciation of the pupils who have learned German in public schools or under private tutelage has in some cases been found faulty, nay, even wrong, a continuous exercise will be devoted throughout the year to German pronunciation according to the most advanced phonetics.

Fifth Grade. The "Direct Method,"

used for all classes in the Chicago Institute, calls into play all the senses of the pupil in a wider and more harmonious way, so that a close correlation with the other branches of study has been effected from the very beginning. The basis for all instruction is the "Anschauungslehre" (instruction by means of objects), to develop the intuitive powers, to the end of acquiring the knowledge of German through the direct contemplation and intuitive study of objects, and of suitable pictures, through excursions to the parks of Chicago and its nearer environs. The simple questions, for instance: *Was (wer) ist das? Ist das die (eine) Wandtafel? Wo steht das Katheder? Wo liegt der Fussboden? Wo hängt die Lampe? Wieviel ist 9 und 8? Wieviel ist 12 weniger 9?* and their answers are written in books kept for this special purpose, and are impressed on the mind through the pupil's acting frequently in the role of teacher of his classmates.

The topics of study in October and November have been: Name and place of objects in the school-room, name of the trees in Lincoln Park; grammar: singular and plural; definite and indefinite articles; arithmetic: cardinal numerals from 1 to 20; exercises in addition and subtraction; writing and reading in the German alphabet. The work for December will be: (a) Continuation of the topics for October and November, the number of the objects in the school-room; (b) grammar: the same as during the last two months, and sentences involving the present tense of "sein"; (c) arithmetic: exercises in addition and subtraction from 1 to 40; (d) further appropriate exercises in writing and reading; (e) the most familiar and simplest salutations, for example, *Guten Tag, Guten Morgen, Guten Abend!*

Miss Goodrich, the teacher of music, has taught the pupils of this and the other grades the cradle song, *Nun schlaf, mein liebes Kindelein.* In December the Christmas carol, *Zu Bethlehem geboren ist uns ein Kindelein,* will be sung.

Sixth, Seventh, Eighth Grades form one class this year. As the knowledge of German acquired in divers ways is varied and generally deficient, the instructor is forced to keep carefully in view individual defects. Here, as in all classes, explanations are made, as far as possible, in German. English is not, however, proscribed when by its use the pupil's ideas can be made clearer and more accurate; it has nevertheless a secondary office to perform. Pupils must give their answers in German, and, moreover, in complete sentences.

A description of autumn, with suitable questions and answers, has served as a specimen of composition (Aufsatz) illustrating the structure of simple cardinal sentences, the principal uses of punctuation, the formation of the plural, exercises in declension and conjugation. Walks to Lincoln Park have made the pupil familiar with plants and trees, thus coördinating his work with the study of plants. Writing exercises in small German letters have been given frequently. Great attention has been paid to easy German reading exercises, as the pupils' skill in reading was found to be very low. For memory work has served the simple autumn song, *Ade, du schöne Sommerzeit.* In all classes, throughout the year, especial stress will be laid upon the memorizing of carefully selected prose and verse, thus enlarging with comparative ease the pupils' vocabulary and their acquaintance with idiomatic expressions.

The work for December will be (a), a description of the Rhine for composition work; (b), further exercises in the structure of principal sentences, formation of the plural, declension, conjugation of auxiliary verbs, relative clauses, punctuation; the general appearance of Lincoln Park

in winter; (d), writing exercises in the simpler capital letters; (e), suitable reading exercises; (f), customary salutations; (e), memorizing of the first stanza of the folk song (Volkslied) *Der Tannenbaum:*

O Tannenbaum, o Tannenbaum,
Wie treu sind deine Blätter!
Du grünst nicht nur zur Sommerzeit,
Nein, auch im Winter, wenn es schneit.
O Tannenbaum, o Tannenbaum,
Wie treu sind deine Blätter!

High School. The first and second-year pupils form one class. With these pupils the acquirements in German are also very faulty; not all of them are acquainted even with German script. Therefore special writing exercises have been and will be kept up. The still fuller description of autumn than in the grammar school has given a great opportunity for a drill in declension, conjugation of regular and irregular verbs, orthography, punctuation.

The subject for composition work for December will be the Rhine, associating the study particularly with geography and history, strengthening and enlarging the former work in grammar. Through walks in Lincoln Park, the pupils have been instructed in the knowledge of its plants and animals. December will show them the winter scenery of the park. For a correct, fluent, and expressive reading, Andersen's *Bilderbuch ohne Bilder* has been selected as most suitable to the capacity and experience of the pupils. Andersen, though not a German, in all his works displays the genuine Germanic spirit, full of refined tenderness and depth of feeling. The little German sketches, "What the Moon Saw," in the *Picturebook Without Pictures*, are free from the archaisms found in the fairy tales by the Grimm Brothers, and illustrate the easy though suggestive language of every-day life. The numerous illusions to facts from literature, arts, geography, history, ethnology, archæology, are peculiarly adapted to awakening the pupil's interest for scientific subjects. The memory work for October and November has been the autumn song "*Kahl sind Wälder und Gesträuch.*"

In December the most popular German Christmas carol will be learned:

"Stille Nacht, Heilige Nacht!"

Stille Nacht, heilige Nacht!
Alles schläft, einsam wacht
Nur das traute, hochheilige Paar,
Das im Stalle zu Bethlehem war
Bei dem himmlischen Kind. (Kehrreim)

Variation:

Holder Knabe im lockigen Haar,
Schlaf in himmlischer Ruh! (Kehrreim)

Stille Nacht, heilige Nacht!
Hirten erst kund gemacht.
Durch der Engel hallelujah
Tönt es laut von fern und nah:
Christ der Retter ist da! (Kehrreim)

Stille Nacht, heilige Nacht!
Gottes Sohn, o wie lacht
Lieb' aus deinem göttlichen Mund,
Da uns schlägt die rettende Stund
Christ in deiner Geburt! (Kehrreim)

Fourth Year. (For the pupils of the third year there is at present no need for German.) Careful attention is paid to literature in this class. The study from October until New Year is Schiller in his life and work, his educational thoughts, and his relations to contemporaneous and subsequent English literature. The memory work has been selected as follows from his poems: for October and November, *Das Mädchen aus der Fremde*, *Die Worte des Glaubens;* for December, *Der Handschuh*, and a few extracts from his epigrams. Suitable dictations and translations have been and will continue to be prominent means for certain parts in grammar and orthography in which the pupils show themselves deficient. The basis for orthography is *Regel-und Wörterverzeichnis für die preussischen Schulen*, Berlin, 1900.

December will be particularly devoted to the improvement in letter-writing. For extended reading exercises Schiller's *Der Neffe als Onkel* will be used. Although this play is only a translation from the French *Médiocre et Rampant*, by Louis B. Picard, the masterful style of Schiller rendered it capable of treatment as a genuine German composition. The amusing comedy abounds in the best every-day phrases and idioms, combined with a bright dialogue, sparkling wit, and charming, practical morality. An elaborate description of Lincoln Park has served to improve the style, and furnish correlation with other branches of study. The work for December will be based upon a description of the Rhine.

To what degree composition, first fruit of instruction, must be given attention, the following specimen may illustrate:

Geſang der Geiſter über den Waſſern.

Des Menſchen Seele
Gleicht dem Waſſer:
Vom Himmel kommt es,
Zum Himmel ſteigt es,
Und wieder nieder
Zur Erde muß es,
Ewig wechſelnd.

Strömt von der hohen,
Steilen Felswand
Der reine Strahl,
Dann ſtäubt er lieblich
In Wolkenwellen

Zum glatten Fels,
Und leicht empfangen,
Wallt er verſchleiernd,
Leis rauſchend
Zur Tiefe nieder.

Ragen Klippen
Dem Sturz entgegen,
Schäumt er unmutig
Stufenweiſe
Zum Abgrund.

Im flachen Bette
Schleicht er das Wieſenthal hin,
Und in dem glatten See
Weiden ihr Antlitz
Alle Geſtirne.

Wind iſt der Welle
Lieblicher Buhler;
Wind miſcht vom Grund aus
Schäumende Wogen.

Seele des Menſchen,
Wie gleichſt du dem Waſſer!
Schickſal des Menſchen,
Wie gleichſt du dem Wind!

Wolfgang Göthe.

Spirit Song Over the Waters.

The soul of man
Resembles water;
From heaven it cometh,
To heaven it soareth
And then again,
To earth descendeth,
Changing forever.

Down from the lofty
Rocky wall
Streams the bright flood,
Then spreadeth gently
In clouded billows

O'er the smooth rock,
And welcomed kindly,
Veiling, on roams it,
Soft-murmuring,
Toward the abyss.

Cliffs projecting
Oppose its progress,—
Angrily foams it
Down to the bottom
Step by step.

Now, in flat channel,
Through the meadowland steals it.
And in the polish'd lake
Each constellation
Joyously peepeth.

Wind is a loving
Woer of water;
Wind blends together
Billows all foaming.

Spirit of man,
Thou art like unto water!
Fortune of man,
Thou art like unto wind!

—*Edgar Bowring.*

CHICAGO INSTITUTE

Das Wasser ein Bild der Seele

nach Göthe's Gedicht: Gesang der Geister über den Wassern. Das Wasser überhaupt als Element in seinen verschiedenen Daseinsformen und Phänomenen, nicht etwa ein Bach in verschiedenen Stadien seines Laufes dient als Gleichnis. Dem auf die Stimmen der Wasser lauschenden Dichter erzählen die Geister derselben die geheimnisvolle Geschichte der menschlichen Seele.

I. Das Wasser in der Atmosphäre.

1. Naturbild. Einst schwebte alles Wasser in Dampfform über der glühenden Erdkugel: als deren Rinde sich im Luftraum verkühlte, strömte das Wasser herab und füllte die Meeresbecken und Stromrinnen aus. — Das Wasser verwandelt sich bei höherer Temperatur wieder in Dampf, erhebt sich in die Lüfte und wird als Wolke vom Wind auf seine Flügel genommen, um über kurz oder lang als Regen oder Tau, Hagel- oder Schneeschauer sich abermals niederzuschlagen. Das Wasser ist also in ewigem Kreislauf unterwegs zwischen Himmel und Erde.

2. Anwendung. So ist auch die Menschenseele schwebend zwischen Himmel und Erde, wechselsweise von dem Himmel und von der Erde angezogen. Der ideale Zug, das übersinnliche Wesen der Seele deutet auf eine höhere, über diese Erde hinausliegende Heimat (die religiösen Ahnungen sind das erste, womit die Völker ihr geschichtliches Leben beginnen); und doch sieht sich die Seele in ihrem Leben und Wirken auf diesen irdischen Schauplatz angewiesen und durch ihren Körper, seine Bedürfnisse und Triebe gleich dem Tiere an die Erdscholle gebunden. Stets strebt sie in höhere Regionen empor, ohne doch in denselben dauernd verweilen zu können: sie muß über kurz oder lang immer wieder auf die Erde und in die Materie zurückfallen. Daher der Mensch nach Herder das verbindende Mittelglied zweier Welten.

II. Das Wasser auf der Erdoberfläche, in seiner Wirkungsweise und Erscheinung durch Bodenverhältnisse bedingt.

1. Das Wasser im Sturz zur Tiefe.

a. Staubbach. Naturvorbild im Lauterbrunnenthal. Ein ansehnlicher Bach stürzt von einer 264 Meter hohen senkrechten Felswand in das Thal, ohne auf seinem Wege durch die freie Luft auf ein Hindernis zu stoßen: eines der graziösesten Naturschauspiele. Der anfangs geschlossen im Bogen sich über die Felswand hervorstürzende Strahl löst sich in der Luft auf, um unten als rieselnder Staubregen anzukommen, und gewährt von unten angesehen das Bild eines luftigen Schleiers, der von den Winden, die ihn ergreifen, bald dahin bald dorthin geweht, immer wieder in andere Falten fällt.

Anwendung. Bild einer schönen, harmonisch angelegten Seele, welche in ihrer Entwickelung ohne Hindernis, Bruch oder Anstoß fortschreitet, stetig nur den eigenen Impulsen gehorchend. Solche Naturen zeigen ein geringeres Maß von Kraft; aber sie entzücken uns durch eine gewisse spielende Leichtigkeit des Daseins, durch welche Anmut und Schönheit der Empfindung, welche auch allem eigen sein wird, was von ihnen kommt. Dieser Art ist die weibliche Seele bei den am feinsten organisierten Individuen: Homer, Sophokles, Buddha, Rafael, Mozart, Göthe, Emerson.

b. Kaskade, deren Wassermasse im Sturz an entgegenstehenden Klippen aufprallt, und nun über dieselben hinweg mit schäumendem Gischt und wildem Rauschen in mächtigen Absätzen den Weg in die Tiefe sucht: das imposante Bild großartiger Kraftentwickelung, die eben in der Ueberwindung großer Schwierigkeiten zur Erscheinung kommt.

Anwendung. Bild einer starken, schroffe Gegensätze in sich verarbeitenden, in ihrer Entwicklung durch gewaltsame Krisen und heftige Gemütskämpfe hindurchgehenden Seele, die eben darum eine gewisse Schroffheit und Härte an sich hat, stoßweise mit leidenschaftlicher Heftigkeit und Gewaltsamkeit wirkt und mit niederwerfender Thatkraft durch Feinde und Hindernisse aller Art sich durchschlägt, ohne jedoch zu der innern Harmonie jener schönen Naturen gelangen zu können. Hieher gehören die zu schroffem Wirken nach außen geschaffenen männlichen Naturen wie Bismarck, Künstler wie Dante, Michel Angelo, Schiller, Beethoven, Richard Wagner; unter den Helden der Religion Paulus, Luther.

2. Das Wasser in horizontaler Lage, fließend und stehend.

a. Der Fluß im Thal. Das Wasser in einem geregelten Bett und in beschränkter und ruhiger Natur (Wiesenthal) fließt dahin mit stetiger, aber bei dem geringen Gefälle träger und gleichförmiger Bewegung seiner Wellen, ohne irgendwo eine größere Tiefe zu erreichen.

Anwendung. Bild einer in enggebundene Berufsverhältnisse hineingestellten Seele; ihr Leben ist ausgefüllt durch eine gewisse regelmäßige und gleichförmige Thätigkeit („Wie ihr Tagewerk gleich windet ihr Leben sich ab"), die gerade ausreicht, sie in einer gewissen Unruhe zu erhalten, aber nicht Raum giebt für eine geistige Vertiefung.

b. Der See. Alle Bewegung des Wassers hat aufgehört; das Wasser steht stille und bildet nun einen glatten Spiegel, in welchem die Sterne des Himmels sich beschauen.

Anwendung. Bild einer Seele, die sich in sinnige Betrachtung versenkt. Befreit von jener zerstreuenden Thätigkeit nach außen finden solche Naturen jene beschauliche Stille und Sinnigkeit, welche unentbehrlich ist, um das Weltbild reich und tief in sich aufzunehmen und mit voller Klarheit die Ideale der Menschenbrust wiederzuspiegeln.

3. Die Wasserfläche unter dem Einfluß des Windes.

(Wir haben an eine ausgedehntere Fläche, etwa einen See zu denken).

Doppelte Wirkungsweise des Windes:

a. Der Wind weht über den See als ein fächelnder Hauch, der nur dessen Oberfläche rührt und den Wasserspiegel kräuselt.

Anwendung. Die Seele lernt das Schicksal

nur kennen von deſſen freundlicher Seite. Es verfährt mit ihr gelind; koſend und ſchmeichelnd, höchſtens einmal neckend führt es ſie durchs Leben. Die Seele entnimmt dann dem Leben nur leichte Reize und Eindrücke, die nicht beſonders tief gehen und an der Oberfläche haften.

b. Der Wind weht über den See als ein brauſender Orkan, der ihn in ſeinen Tiefen aufwühlt, daß mächtige Wogen brandend aneinanderſchlagen und das Unterſte ſich zu oberſt kehrt.

Anwendung. Aber das Schickſal zeigt ſich der Seele oft auch von ſeiner furchtbaren, erſchütternden Seite. Gewaltige Schickſalsſchläge ſtürmen wild auf die Seele ein, ſchneiden tief in ihr Innerſtes ein, werfen ſie in den Extremen der Empfindung herum und wühlen alles auf, Gutes und Schlimmes, was von erhabener Kraft und von dämoniſcher Leidenſchaft auf dem verborgenen Grunde des Herzens ſchlummert.

Die Seele ſteht in ihrer ganzen Stimmung und Färbung unter dem Einfluß des Schickſals wie der Waſſerſpiegel unter dem Einfluß des Windes. Wie die vom Sturm erregte See eine ganz andere Phyſiognomie zeigt als der Waſſerſpiegel, mit dem der Zephyr ſpielt, ſo gleicht die Seele, deren Leben ein ſonniger Maitag iſt, der andern nicht, welche durch ſchwere Schickſalsſtürme in die Tiefen des Leidens eingetaucht worden iſt.

On account of the importance of the subject, the English translation is given.

WATER AN IMAGE OF THE SOUL, according to Göthe's poem: *Spirit Song Over the Waters.*

In its various forms and manifestations, water generally as an element and not perhaps in the various stages of its course in a brook serves as a simile. The spirits of the water whisper to the poet the mystic story of the human soul.

I. Water in the atmosphere. Nature-picture. At a time in the indefinite past, all water floated in the form of vapor over the glowing terrestrial globe; when the earth's crust cooled in the aërial sea, the water poured down filling the ocean basins and the river channels. Under the influence of a higher temperature, water re-vaporizes, rises in the air, and is carried as clouds on the wings of the wind, sooner or later to fall down again upon the earth as rain, dew, hail, or snow. Water, therefore, is in perpetual circulation between sky and earth.

Application. So too does the human soul hang soaring between heaven and earth, drawn alternately toward the one and the other. The idealistic tendency, the supernatural essence of the soul points to a higher home beyond the earth (the religious premonitions are the first indications that a nation has begun its historical life); and yet the soul finds itself confined to a terrestrial sphere of action, and through its body, needs, and instincts, bound to the earth as irretrievably as is the animal. It is continuously struggling toward higher realms, but without the ability to establish permanent habitation in them: sooner or later, it must fall back again upon the earth and matter. Man, therefore, according to Herder, is the connecting link between two worlds.

II. Water on the surface of the earth. In its effects and phenomena, conditioned by the nature of the soil.

1. Water in its downward rush. (a) Staubbach (spraying waterfall). Prototype in nature in the valley of Lauterbrunnen (the view of the waterfall at the foot of the Jungfrau in the canton of Bern on Göthe's second voyage to Switzerland, September, 1779, to January, 1780, gave birth to the poem). A brook of considerable size plunges from a vertical wall of rock 264 meters high, into the valley, without meeting with any obstacle in its downward flight through the air, one of the most graceful of natural spectacles. The arrowlike ray, at first resembling a bow dashing far over the cliffs, dissolves in the air to fall as a drizzling rain. Seen from below, it presents a picture of an airy veil, which, carried on the wings of the wind, is blown hither and thither, to fall in an ever-changing, never-ending series of gauze-like undulations.

Application: Image of a beautifully harmonious disposition of the soul, which in its development, without let, hindrance, or setback, moves continuously forward, obedient to nothing save its own innate impulse. Such natures manifest a small measure of strength, but they charm us with a certain buoyancy of spirit, through a sweetness and beauty of feeling, which characterizes everything they produce. Of such sort is the feminine spirit with the most delicately organized individuals, for instance, Homer, Sophocles, Buddha, Rafaël, Mozart, Göthe, Emerson.

b. Cascade. The waters of which dashing down, bound from the cliff and far beyond with foaming crest and roaring sound, and in mighty leaps fight their way downward: the imposing image of a grand development of strength, the very existence of which was conditioned by the overcoming of tremendous difficulties.

Application: Image of a powerful soul assimilating vigorous contrarieties of thought, which in its development struggles through difficult crises, and vehement internal conflicts. For this very reason, it has assumed a certain harshness and sternness, acts by impulse with

passionate vigor and vehemency, and forces its way through foes and barriers of all sorts with victorious onslaught, but ever falling short of the deeply yearned-for harmony of nobler minds. To this class belong the rougher masculine natures destined for the sterner realities of active life, as Bismarck, or as the artists Dante, Michael Angelo, Schiller, Beethoven, Richard Wagner; as heroes of religion, Paul, Luther.

2. Water in a horizontal position, flowing or standing.

a. The river in the valley. The water flows on in its smoothly-ordered bed, and through a monotonously peaceful landscape (meadowland) with steady, and from the slight fall, with even and uninterrupted motion, nowhere attaining any considerable depth.

Application: Image of a soul constrained to act in narrow professional vocations; its life is filled with a certain mechanical round of duties ("Its life unfolds through its daily work") which just suffices to keep it perpetually disturbed, but does not furnish opportunity for deepening the mental life.

b. The lake. All movement of the water has ceased. The water now stands still, forming a smooth surface, in which the stars of heaven mirror themselves.

Application: Image of a soul absorbed in profound contemplation. Freed from the distracting influence of the external things, such natures find that quiet contemplativeness and sensitiveness which are indispensable to the deep and rich absorption of the world-panorama, and to the reflection with perfect sharpness of all the ideals of the human heart.

c. A sheet of water under the influence of the wind. We must have in mind an extended surface of water, such as a lake.

Twofold effect of the wind:

1. The wind fans the surface of the water like a gentle zephyr, barely moving it into graceful ripples.

Application: The soul of man learns its destiny only through acts of kindness. Leniently does destiny deal with it; with caress, and flattery, yea, even with mild irony does it lead the soul through life. The human spirit takes then from life only the slightest and most superficial impressions and stimuli.

2. The wind blows over the lake in a roaring hurricane, stirring it to its profoundest depths; huge breakers lashing each other and crushing with fiendish glee all within reach.

Application: But destiny often reveals itself through its manifestations of awe-inspiring terror. The gigantic strokes of destiny beat wildly upon the soul, gashing it to its very core, hurling it back and forth between the most antagonistic dispositions, dragging to the surface everything, good and bad, that lies buried in the depths of the human heart, from sublimest strength to most demonlike passion.

Every mood and temper of the soul is as fully subject to the influence of destiny as is the surface of the water to that of the wind. As the features of the storm-tossed sea differ from those of the placid surface of the water over which the zephyr plays, so does the soul whose life is perpetual May-day differ from the one which has been plunged into the yawning abyss of deep affliction by the simooms of fate.

Greek and Latin

Allen W. Gould

The pupils who are beginning Greek, as well as those beginning Latin, will continue their study of the life of the Greeks and Romans through the language in which that life expressed itself. By December it is expected that the Greek pupils will be able to enter more fully into the inner life of the Greeks, since the easier words and phrases have already become familiar to them. Consequently the ethical and intellectual life of the Greeks, which was touched upon in the last lesson of October, by reading in a simplified form Socrates' talk with his son about duty to mothers, is brought still nearer to the student by giving in Lesson XI an adaptation of Alcibiades' talk with Pericles about the nature of human law, and in Lesson XII an extract from Socrates' talk with Aristippus about the education they ought to give

a youth who wishes to be of use to his native country. This is followed in Lesson XIII and XIV by a somewhat less simplified reproduction of Socrates' talk with a brother who cannot agree with his brother, and a friend who cannot support the poor relations thrust upon him by the chance of civil war in Attica. These discussions will help the pupils to get the spirit of the best Greek thought while they are learning the forms of that thought as given by Xenophon. Some of these lessons have been illustrated by statues or pictures drawn from vases, in order to make the ideas clearer and more concrete.

The successive lessons have been so planned as to give the student the easier and more concrete words and phrases and the more tangible aspects of Greek life first, and to present with each advance only a moderate number of new words and constructions; and it is intended to give sufficient practice, both written and oral, to make the new forms and ideas familiar to the pupil.

A similar series of studies of Roman life and thought was planned for the class beginning Latin in the Sixth Grade, though the steps of advance could not be so rapid, because the students are younger and the language more difficult. But owing to the fact that a large number of pupils in the Ninth Grade — the first year of the High School — wished to begin Latin, a series of lessons had to be arranged which should be fitted to more mature minds than are common in the Sixth Grade, and which should advance more rapidly than we had planned to do with that grade. Some of the material which was used with the advanced class in October is printed in this issue of the COURSE OF STUDY. These lessons are also illustrated by two scenes of school life, one drawn from a Greek vase of Socrates' day, and the other from a wall-painting in Herculaneum. They will be found on pages 323 and 325.

Greek

FIRST YEAR, EIGHTH GRADE. The Reading Lessons for December will be found on page —.

SECOND YEAR, NINTH GRADE. In December the pupils will read the fifth and sixth chapters of the first book of Xenophon's *Anabasis*, giving especial attention to the typical Persian trial and comparing it with the trial of an Athenian citizen at Athens. They will look up *Dicastes* and *Dike* in Harper's *Dictionary of Classical Literature and Antiquities*, and in Smith's *Dictionary of Greek and Roman Antiquities*. They will also read the account of the Athenian courts in Grote's *Greece*, chapters 46 and 70, and in Curtius' *Greece*, Book III, chapter 3. They will also note the difference between Greek and Persian arms and armies.

THIRD YEAR, TENTH GRADE. The class will begin the study of Plato's Apology, reading the first six chapters. They will make themselves acquainted with Plato's life as found in Harper's *Classical Dictionary* and Smith's *Dictionary of Greek and Roman Biography*, as well as in the encyclopedias. They will also make a fuller study of Greek courts by reading chapter 46 of Grote's *Greece*. They will learn the popular prejudice against Socrates by reading parts of Aristophanes' *Clouds*, and the religious feeling by reading Campbell's *Religion in Greek Literature*, chapter 14.

FOURTH YEAR, ELEVENTH GRADE. Students will continue their investigation into the religion of the Greeks by reading the third book of the Odyssey. They will also look up and report to the class *Agamemnon* and *Menelaus* in Smith's *Dictionary of Greek and Roman Biography and Mythology; Argos* and *Mycene* in Smith's *Dictionary of Greek and Roman Geography; Sac-*

rificium in Smith's *Dictionary of Greek and Roman Antiquities*, and all of these subjects in Harper's *Classical Dictionary* and the encyclopedias. They will also read and report Campbell's *Religion in Greek Literature*, chapter 3.

FIFTH YEAR, TWELFTH GRADE. The class will review the first 700 lines of Sophocles' *Antigone*, devoting special attention to the dramatic rendering of the Greek dialogue. It is expected that we shall read in advance to line 883, making a careful study of the choral passages. Besides consulting the works already referred to, the students will read Haigh's *Attic Theatre*, chapters 1, 2 and 6.

Latin

FIRST YEAR, SIXTH GRADE. Two sets of lessons for the first year of Latin are found in this number, one on page 325 and the other on page 328.

SECOND YEAR, SEVENTH GRADE. The study of the life of the Romans, as revealed in their history, will be continued by reading Nepos's *Hannibal*, chapters 4-9. A fuller knowledge of the battles of the *Trebia*, *Trasimene*, *Cannæ*, and *Zama* will be secured from Smith's *Dictionary of Geography* and Harper's *Classical Dictionary*, as well as from the encyclopedias. The students will also consult Smith's *Dictionary of Biography*, and Harper's *Classical Dictionary*, and the encyclopedias under *Scipio Africanus the Younger*. Mommsen's *Rome*, Bk. III, chapters 4-6, and Morris' *Hannibal*, chapters 4-8, will give a more connected outline.

THIRD YEAR, EIGHTH GRADE. The class will continue their study of the beginnings of European civilization by reading Cæsar's *Gallic War*, II, 20-35, and by consulting Smith's *Dictionary of Antiquities* and Harper's *Classical Dictionary* on *cornu*, *lituus*, *scutum*, *vinea*, *agger*, and *turris*. More details and different points of view will be found in Fowler's *Cæsar*, chapter 10, Mommsen's *Rome*, Bk. V, chapter 7, and Merivale's *Romans*, chapters 5-8.

FOURTH YEAR, NINTH GRADE. The class will continue its study of the crisis in the Roman government by reading Cicero's First Oration against Catiline, for which their acquaintance with Sallust's *Conspiracy of Catiline* has prepared them. They will consult Harper's *Classical Dictionary* and Smith's *Dictionary of Antiquities* under *Consul* and *Senatus*, to find the powers of these two authorities. They will also report what they find in Forsyth's *Cicero*, chapters 7, 8; Davidson's *Cicero*, chapter 5; Fowler's *Cæsar*, chapter 5; Merivale's *Romans*, chapter 3; Mommsen's *Rome*, Book V, chapter 5; and Plutarch's *Life of Cicero*.

FIFTH YEAR, TENTH GRADE. The study of Roman life as revealed in the poetry will be continued by reading Lucretius III, 1-30, 830-864, 894-1094; V, 1-96, 146-169. Different estimates of this great poet will be found in Sellar's *Roman Poets of the Republic*, chapters 10-14; Mallock's *Lucretius*, chapters 3-6; Cruttwell's *History of Roman Literature*, Part I, chapter 4.

SIXTH YEAR, ELEVENTH GRADE. The class will continue their study of the Roman religion by reading Virgil's *Æneid*, I, 657–II, 335. They will consult Smith's *Dictionary of Biography and Mythology* on *Hector*, *Laocoön*, *Dido*, and *Cupid;* Smith's *Dictionary of Antiquities* on *Palladium*, and Harper's *Classical Dictionary* and the encyclopedias on all of these subjects.

SEVENTH YEAR, TWELFTH GRADE. The pupils will continue their study of what was best under the Roman Empire by taking up Tacitus' *Life of Agricola*. They will consult Smith's *Dictionary of Biography* under *Tacitus*, *Agricola*, *Nerva*, *Trojan*, and *Boadicea*, and Harper's *Classical Dictionary* and the encyclopedias for the same subjects. Merivale's *History of*

the Romans, chapter 61, will give a more general view of the times; while Tennyson's *Boadicea* will show how the poet looks at these characters.

Greek Lessons

XI.

Ὀλίγων οἱ ἀγαθοὶ νόμων δέονται· οὐ γὰρ τὰ πράγματα πρὸς νόμους, ἀλλὰ οἱ νόμοι πρὸς τὰ πράγματα τίθενται.

Θεόφραστος.

Alcibiades Tests Pericles' Definition of Law

1. What is Law?

Λέγεται Ἀλκιβιάδην, πρὶν εἰκοσιν ἐτῶν εἶναι, Περικλεῖ τοιάδε διαλεχθῆναι περὶ νόμων·

Εἰπέ μοι, ἔφη, ὦ Περίκλεις, ἔχοις ἄν με διδάξαι, τί ἐστι νόμος;

Πάντως δήμου, ἔφη ὁ Περικλῆς.

Δίδαξον δὴ πρὸς τῶν θεῶν, ἔφη ὁ Ἀλκιβιάδης.

Ἀλλ' οὐδέν τι χαλεποῦ πράγματος ἐπιθυμεῖς, ὦ Ἀλκιβιάδη, ἔφη ὁ Περικλῆς, βουλόμενος γνῶναι, τί ἐστι νόμος· πάντες γὰρ οὗτοι νόμοι εἰσίν, οὓς τὸ πλῆθος συνελθὸν ἔγραψεν ἅ τε δεῖ ποιεῖν καὶ ἃ μή.

Ἐὰν δὲ μὴ τὸ πλῆθος, ἀλλ', ὥσπερ ὅπου ὀλιγαρχία ἐστίν, ὀλίγοι συνελθόντες γράψωσιν, ὅ τι χρὴ ποιεῖν, ταῦτα τί ἐστι;

Πάντα, ἔφη, ὅσα ἂν τὸ κρατοῦν τῆς πόλεως βουλευσάμενον, ἃ χρὴ ποιεῖν, γράψῃ, νόμος καλεῖται.

Καὶ ἂν τύραννος οὖν κρατῶν τῆς πόλεως γράψῃ τοῖς πολίταις, ἃ χρὴ ποιεῖν, καὶ ταῦτα νόμος ἐστί;

Καὶ ὅσα τύραννος ἄρχων, ἔφη, γράφει, καὶ ταῦτα νόμος καλεῖται.

2. But what, then, is Lawlessness?

Βία δέ, ἔφη ὁ Ἀλκιβιάδης, καὶ ἀνομία τί ἐστιν, ὦ Περίκλεις; Ἆρ' οὐχ ὅταν ὁ κρείττων τὸν ἧττω μὴ πείσας, ἀλλὰ βιασάμενος ἀναγκάσῃ ποιεῖν, ὅ τι ἂν αὐτῷ δοκῇ;

Ἔμοιγε δοκεῖ, ἔφη ὁ Περικλῆς.

Καὶ ὅσα ἄρα τύραννος μὴ πείσας τοὺς πολίτας ἀναγκάζει ποιεῖν γράφων, ἀνομία ἐστί;

Δοκεῖ μοι, ἔφη ὁ Περικλῆς· ἀνατίθεμαι γὰρ τὸ ὅσα τύραννος μὴ πείσας γράφει νόμον εἶναι.

Ὅσα δὲ οἱ ὀλίγοι τοὺς πολλοὺς μὴ πείσαντες, ἀλλὰ κρατοῦντες γράφουσι, πότερον βίαν φῶμεν, ἢ μὴ φῶμεν εἶναι;

Πάντα μοι δοκεῖ, ἔφη ὁ Περικλῆς, ὅσα τις μὴ πείσας ἀναγκάζει τινὰ ποιεῖν, εἴτε γράφων εἴτε μή, βία μᾶλλον ἢ νόμος εἶναι.

Καὶ ὅσα ἄρα τὸ πᾶν πλῆθος κρατοῦν τῶν τὰ χρήματα ἐχόντων γράφει μὴ πεῖσαν, βία μᾶλλον ἢ νόμος ἂν εἴη;

Μάλα τοι, ἔφη ὁ Περικλῆς.

Consult Smith's *Dictionary of Biography* and Harper's *Classical Dictionary*, and the Encyclopedias on *Alcibiades*, and Harper's *Dictionary* on *Oligarchia*, *Democratia* and *Tyrannos*.

Questions to be Answered in Greek

1. How old was Alcibiades when he conversed with Pericles about law?
2. What was Pericles' first definition of law?
3. What was his definition when not a democracy but an oligarchy was the ruling authority?
4. What was a democracy?
5. What was an oligarchy?
6. What was his definition of law when a tyrant was the ruler?
7. What was his definition of violence?
8. Could we have law without violence, unless all people obeyed the law?
9. Who wrote this conversation of Pericles and Alcibiades?

Vocabulary of New Words

πρίν, *before.*
εἴκοσι, *twenty.*
ἔτος, ους, τό, *year.*
τοιόσ-δε, τοιά-δε, τοιόν-δε, *such.*
διαλεχθῆναι, from διαλέγομαι, *converse.*
εἶπον, *said.*

δή-που, *of course.*
πρᾶγμα, ατος, τό, *act, thing, affair.*
ἐπι-θυμέω, *desire.*
γνῶναι, from γιγνώσκω, *know.*
πλῆθος, ους, τό, *multitude.*
συν-ελθόν, from συνέρχομαι, *come together*
δεῖ, from δέω, *want, need.*
ὅπου, *where.*
ὀλίγος, η, ον, *little;* pl. *few.*
ὀλιγαρχία, ας, ἡ, *oligarchy.*
χρή, *it is necessary.*
κρατέω, *be powerful, master.*
ὅσος, η, ον, *as many as.*
βουλεύω, *counsel, plan.*
τύραννος, ου, ὁ, *absolute ruler.*
πόλις, εως, ἡ, *city.*
πολίτης, ου, *citizen.*
ἄρχω, *rule, be first, begin.*
βία, ας, ἡ, *force.*
βιάζομαι, *force, constrain.*
ἀνομία, ας, ἡ, *lawlessness.*
κρείττων, ον, *stronger.*
ἥττων, ον, *weaker.*
ἀναγκάζω, *compel.*
πείθω, *persuade.*
ἀνατίθεμαι, *put up, retract.*
χρήματα, τα, *possessions;* from χρῆμα, ατος, τό, *thing used.*

XII.

Θεὸς συνεργὸς πάντα ποιεῖ δᾳδίως.
Μένανδρος.

What training does a youth need who would be a help to his native land?

Εἰπέ μοι, ἔφη ὁ Σωκράτης, ὦ Ἀρίστιππε, εἰ δέοι σε παιδεύειν δύο τῶν νέων, τὸν μέν, ὅπως ἱκανὸς ἔσται ἄρχειν, τὸν δέ, ὅπως μηδ' ἀντιποιήσεται ἀρχῆς, πῶς ἂν ἑκάτερον παιδεύοις; Βούλει σκοπῶμεν, ἀρξάμενοι ἀπὸ τῆς τροφῆς; Οὐκοῦν τὸ μὲν βούλεσθαι σίτου ἅπτεσθαι, ὅταν ὥρα ἦκῃ, ἀμφοτέροις εἰκὸς παραγίγνεσθαι;

Εἰκὸς γάρ, ἔφη ὁ Ἀρίστιππος.

Τὸ οὖν προαιρεῖσθαι τὸ κατεπεῖγον μᾶλλον πράττειν ἢ τῇ γαστρὶ χαρίζεσθαι πότερον ἂν αὐτῶν παιδεύοιμεν;

Τὸν εἰς τὸ ἄρχειν, ἔφη, νὴ Δια, παιδευόμενον, ὅπως μὴ τὰ τῆς πόλεως ἄπρακτα γίγνηται παρὰ τὴν ἐκεῖνου ἀρχήν.

Οὐκοῦν, ἔφη, καὶ ὅταν πιεῖν βούλωνται, τὸ δύνασθαι διψῶντα ἀνέχεσθαι τῷ αὐτῷ προσθετέον;

Πάνυ μὲν οὖν, ἔφη.

Τὸ δὲ ὕπνου ἐγκρατῆ εἶναι, ὥστε δύνασθαι καὶ ὀψὲ κοιμηθῆναι καὶ πρωῒ ἀναστῆναι καὶ ἀγρυπνῆσαι, εἴ τι δέοι, ποτέρῳ ἂν προσθείημεν;

Καὶ τοῦτο, ἔφη, τῷ αὐτῷ.

Τί δέ; ἔφη, τὸ μὴ φεύγειν τοὺς πόνους, ἀλλὰ ἐθελοντὴν ὑπομένειν, ποτέρῳ ἂν προσθείημεν;

Καὶ τοῦτο, ἔφη, τῷ ἄρχειν παιδευομένῳ.

Τί δέ; τὸ μαθεῖν, εἴ τι ἐπιτήδειόν ἐστι μάθημα πρὸς τὸ κρατεῖν τῶν ἀντιπάλων, ποτέρῳ ἂν μᾶλλον προσθείημεν;

Πολύ, νὴ Δί', ἔφη, τῷ ἄρχειν παιδευομένῳ· καὶ γὰρ τῶν ἄλλων οὐδὲν ὄφελος ἄνευ τῶν τοιούτων μαθημάτων.

Consult Smith's *Dictionary of Biography* and Harper's *Classical Dictionary* on *Aristippus,* and look up Spartan education under *Ludus* in Smith's *Dictionary of Antiquities,* and under *Education* in Harper's.

Questions to be Answered in Greek

1. Who was Aristippus?
2. How did Socrates think a youth, who was to take part in the government of his country, ought to be trained in regard to eating?
3. How, in regard to drinking?
4. How, in regard to sleeping?
5. How, in regard to labors?
6. How, in regard to studies?
7. Did the Athenians try to train their youth in this way?

Vocabulary of New Words

ἀγρυπνέω, *be wakeful.*
ἀμφότερος, α, ον, *both of two.*
ἀνέχομαι, *endure;* from ἀνέχω.
ἀναστῆναι, *arise;* from ἀνίστημι.
ἀντίπαλος, ου, *rival.*
ἀντιποιέομαι, *claim, aspire to.*
ἅπτομαι, *seize;* from ἅπτω, *fasten.*
γαστήρ, έρος, ἡ, *belly, stomach.*
διψάω, *thirst.*
ἐγκρατής, ες, *master of.*
εἰκός, ότος, τό, *likely.*
ἑκάτερος, α, ον, *each of two.*
ἐπιτήδειος, α, ον, *suitable.*
ἱκανός, ή, όν, *competent, able.*
κατεπείγω, *press, be urgent.*
κοιμηθῆναι, *fall asleep;* from κοιμάω.
μάθημα, ατος, τό, *learning.*
ὄφελος, τό, *advantage.*
παιδεύω, *train, educate.*
πιεῖν, *drink;* from πίνω.
πόνος, ου, *labor.*
πότερος, α, ον, *which of two?*
πράττω, *do, perform.*
προαιρέομαι, *prefer;* from προαιρέω.
προσθετέον, προσθείημεν, from προστίθημι, *impose upon.*
σῖτος, ου, *grain, food.*
σκοπέω, *consider, examine.*
τροφή, ῆς, *nourishment.*
φεύγω, *flee.*
χαρίζομαι, *gratify.*
ὥρα, ας, *time, season.*

XIII.

Ἀδελφὸς ἀνδρὶ παρείη. Πλάτων.

Brothers Should Dwell Together in Unity

1. The Value of a Brother.

Ὁ δὲ Σωκράτης ποτὲ Χαιρεφῶντα καὶ Χαιρεκράτην, ἀδελφὼ ὄντε ἀλλήλοιν, αἰσθόμενος διαφερομένω, ἰδὼν τὸν Χαιρεκράτην, Εἰπέ μοι, ἔφη, ὦ Χαιρέκρατες, οὐ δήπου καὶ σὺ εἷ τῶν τοιούτων ἀνθρώπων, οἳ χρησιμώτερον νομίζουσι χρήματα ἢ ἀδελφούς; Θαυμαστὸν γάρ ἐστιν, εἴ τις τοὺς μὲν ἀδελφοὺς ζημίαν ἡγεῖται, ὅτι οὐ καὶ τὰ τῶν ἀδελφῶν κέκτηται, τοὺς δὲ πολίτας οὐχ ἡγεῖται ζημίαν, ὅτι οὐ καὶ τὰ τῶν πολιτῶν ἔχει, ἀλλ' ἐνταῦθα μὲν δύναται λογίζεσθαι, ὅτι κρεῖττον σὺν πολλοῖς οἰκοῦντα ἀσφαλῶς ἀρκοῦντα ἔχειν, ἢ μόνον οἰκοῦντα τὰ τῶν πολιτῶν ἐπικινδύνως πάντα κεκτῆσθαι, ἐπὶ δὲ τῶν ἀδελφῶν τὸ αὐτὸ τοῦτο ἀγνοοῦσι. Καὶ οἰκέτας μὲν οἱ δυνάμενοι ὠνοῦνται, ἵνα συνεργοὺς ἔχωσι, καὶ φίλους κτῶνται, ὡς βοηθῶν δεόμενοι, τῶν δ' ἀδελφῶν ἀμελοῦσιν ὥσπερ ἐκ πολιτῶν μὲν γιγνομένους φίλους, ἐξ ἀδελφῶν δὲ οὐ γιγνομένους.

2. A Useless Brother.

Καὶ ὁ Χαιρεκράτης εἶπεν· Ἀλλ' εἰ μέν, ὦ Σώκρατες, μὴ μέγα εἴη τὸ διάφορον, ἴσως ἂν δέοι φέρειν τὸν ἀδελφὸν καὶ μὴ μικρῶν ἕνεκα φεύγειν· ἀγαθὸν γάρ, ὡσπερ καὶ σὺ λέγεις, ἀδελφός, ὢν οἷον δεῖ.

Καὶ ὁ Σωκράτης ἔφη· Πότερα δέ, ὦ Χαιρέκρατες, οὐδενὶ ἀρέσαι δύναται Χαιρεφῶν, ὥσπερ οὐδὲ σοί, ἢ ἔστιν οἷς καὶ πάνυ ἀρέσκει;

Διὰ τοῦτο γάρ τοι, ἔφη, ὦ Σώκρατες, ἄξιόν ἐστιν ἐμοὶ μισεῖν αὐτόν, ὅτι ἄλλοις μὲν ἀρέσκειν δύναται, ἐμοὶ δέ, ὅπου ἂν παρῇ, πανταχοῦ καὶ ἔργῳ καὶ λόγῳ ζημία μᾶλλον ἢ ὄφελός ἐστιν.

Ἆρ' οὖν, ἔφη ὁ Σωκράτης, ὥσπερ ἵππος τῷ ἀνεπιστήμονι μέν, ἐγχειροῦντι δὲ χρῆσθαι ζημία ἐστίν, οὕτω καὶ ἀδελφός, ὅταν τις αὐτῷ μὴ ἐπιστάμενος ἐγχειρῇ χρῆσθαι, ζημία ἐστιν;

Πῶς δ' ἂν ἐγώ, ἔφη ὁ Χαιρεκράτης, ἀνεπιστήμων εἶην ἀδελφῷ χρῆσθαι, ἐπιστάμενός γε καὶ εὖ λέγειν τὸν εὖ λέγοντα, καὶ εὖ ποιεῖν τὸν εὖ ποιοῦντα; τὸν μέντοι καὶ λόγῳ καὶ ἔργῳ πειρώμενον ἐμὲ ἀνιᾶν οὐκ ἂν δυναίμην οὔτ' εὖ λέγειν, οὔτ' εὖ ποιεῖν, ἀλλ' οὐδὲ πειράσομαι.

3. How to Make a Brother Useful.

Καὶ ὁ Σωκράτης ἔφη· Εἰ κύων σοὶ ἦν ἐπὶ προβάτοις ἐπιτήδειος ὤν, καὶ τοὺς μὲν ποιμένας ἠσπάζετο, σοὶ δὲ προσιόντι ἐχαλέπαινεν, ἂν ἐπειρῶ εὖ ποιήσας πραύνειν αὐτόν; ἆρα οὐκ ἐπιχειρεῖς μηχανᾶσθαι, ὅπως ὁ ἀδελφός σοι ὡς βέλτιστος ἔσται;

Καὶ ὁ Χαιρεκράτης ἔφη· ὦ Σώκρατες, μὴ οὐκ ἔχω ἐγὼ τοσαύτην σοφίαν.

Λέγε δή μοι, ἔφη, εἴ τινα τῶν γνωρίμων βούλοιο κατεργάσασθαι, ὁπότε θύοι, καλεῖν σε ἐπὶ δεῖπνον, τί ἂν ποιοίης;

Δῆλον, ὅτι κατάρχοιμι ἂν τοῦ αὐτός, ὅτε θύοιμι, καλεῖν ἐκεῖνον.

Εἰ δὲ βούλοιο τῶν φίλων τινὰ προτρέψασθαι, ὁπότε ἀποδημοίης, ἐπιμελεῖσθαι τῶν σῶν, τί ἂν ποιοίης;

Δῆλον, ὅτι πρότερος ἂν ἐγχειροίην ἐπιμελεῖσθαι τῶν ἐκείνου, ὁπότε ἀποδημοίη.

Εἰ δὲ βούλοιο ξένον ποιῆσαι ὑποδέχεσθαι σεαυτόν, ὁπότε ἔλθοις εἰς τὴν ἐκείνου, τί ἂν ποιοίης; Δῆλον, ὅτι καὶ τοῦτον πρότερος ὑποδεχοίμην ἄν, ὁπότε ἔλθοι Ἀθήναζε.

4. Two Brothers should be like Two Hands or Two Feet.

Ἀδελφὼ διαφερομένω, ἔφη ὁ Σωκράτης, οὕτω διάκεισθον, ὥσπερ εἰ τὼ χεῖρε, ἃς ὁ θεὸς ἐπὶ τὸ συλλαμβάνειν ἀλλήλαιν ἐποίησεν, ἀφεμένω τούτου τράποιντο πρὸς τὸ διακωλύειν ἀλλήλω, ἢ εἰ τὼ πόδε θείᾳ μοίρᾳ πεποιημένω πρὸς τὸ συνεργεῖν ἀλλήλοιν ἀμελήσαντε τούτου ἐμποδίζοιεν ἀλλήλω. Οὐκ ἂν πολλὴ ἀμαθία εἴη καὶ κακοδαιμονία τοῖς ἐπ' ὠφελείᾳ πεποιημένοις ἐπὶ βλάβῃ χρῆσθαι; Καὶ μὴν ἀδελφώ γε, ὡς ἐμοὶ δοκεῖ, ὁ θεὸς ἐποίησεν ἐπὶ μείζονι ὠφελείᾳ ἀλλήλοιν, ἢ χεῖρέ τε καὶ πόδε καὶ ὀφθαλμὼ τἆλλά τε, ὅσα ἀδελφὰ ἔφυσεν ἀνθρώποις.

Consult Harper's *Classical Dictionary* under *Sacrificium* and *Hospitium*, and Smith's *Dictionary of Antiquities* under the same titles.

Questions to be Answered in Greek

1. What did Socrates think two brothers ought to be like?
2. How did he find these two brothers acting?
3. How did Chærecrates think he ought to treat a brother?
4. How did he say his brother had treated him?
5. Why does a man buy slaves or acquire friends?
6. If a man tries to make his friend useful, ought he to try also to make his brother useful?
7. How would you get invited to a banquet when your friend sacrifices?
8. What does a guest friend do for you when you go to his city?
9. Which is better — to have just enough while dwelling with many fellow-citizens, or to get all the property of your fellow-citizens and dwell alone?

Vocabulary of New Words

ἀγνοέω, *be ignorant of, not to know.*
ἀνεπιστήμων, ον, *ignorant, unskilled.*
ἀμελέω, *neglect.*
ἀνιάω, *distress, grieve.*
ἀρέσαι, from ἀρέσκω, *please.*
ἀρκέω, *suffice, be sufficient.*
ἀσπάζομαι, *welcome.*
ἀσφαλής, ές, *safe.*
βοηθέω, *aid.*
δεῖπνον, ου, *dinner.*
διακεῖμαι, *be disposed.*
διαφέρω, *differ.*
ἐπίσταμαι, *understand.*
ἐπιχειρέω, *undertake.*
ζημία, ας, *harm, damage.*
ἡγέομαι, *lead, think.*
θαυμάζω, *wonder.*
θύω, *sacrifice.*
ἵνα, *that, in order that.*
ἴσως, *perhaps.*
κεκτῆσθαι, from κτάομαι, *acquire.*

κύων, κυνός, *dog.*
λογίζομαι, *consider.*
μηχανάομαι, *devise, contrive.*
μισέω, *hate.*
οἰκέτης, ου, *servant.*
ὅπως, *how, how that, in order that.*
ποιμήν, ένος, *herdsman, shepherd.*
πούς, ποδός, ὁ, *foot.*
πραΰνω, *make gentle, tame.*
πρόβατα, ων, *cattle, sheep.*
συνεργός, όν, *co-worker, helper.*
τρέπω, *turn.*
φοβέομαι, *fear.*
φύω, *produce.*
χείρ, χειρός, ἡ, *hand.*
χρήσιμος, η, ον, *useful.*
ὠνέομαι, *buy.*

XIV.

Οὐ τοῖς ἀθύμοις ἡ τύχη συλλάμβανει.
Σοφοκλῆς.

Socrates Helps a Discouraged Friend

1. Hard Times in Athens.

Σωκράτης ποτὲ ὁρῶν Ἀρίσταρχον σκυθρωπῶς ἔχοντα, Δοκεῖς, ἔφη, ὦ Ἀρίσταρχε, βαρέως φέρειν τι· χρὴ δὲ τοῦ

No. 1. HEPHAISTOS, CLAD IN THE EXOMIS.
A Bronze Statuette Preserved in Berlin.

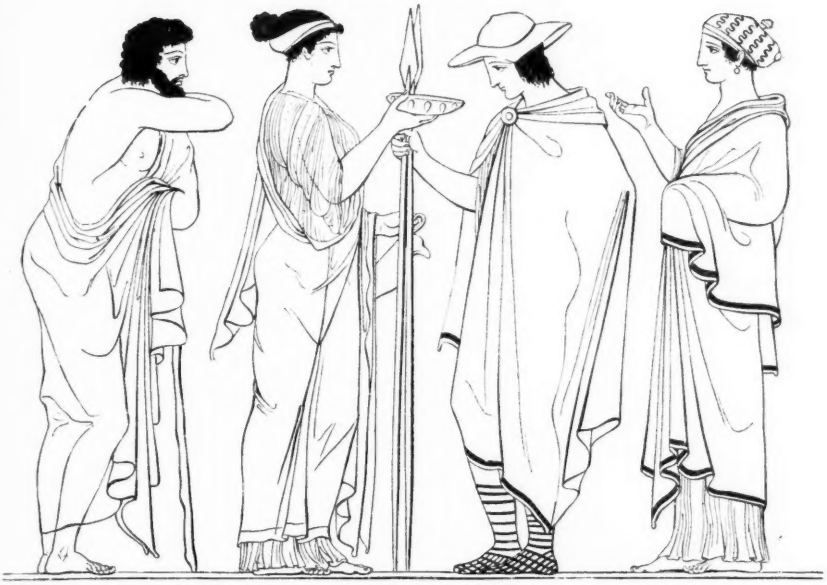
No. 2. FASTENING HER CHITON.
A Bronze Statue Preserved in Naples.

βάρους μεταδιδόναι τοῖς φίλοις· ἴσως γὰρ ἄν τί σε καὶ ἡμεῖς κουφίσαιμεν.

Καὶ ὁ Ἀρίσταρχος· Ἀλλὰ μήν, ἔφη, ὦ Σώκρατες, ἐν πολλῇ γέ εἰμι ἀπορίᾳ· ἐπεὶ γὰρ ἐστασίασεν ἡ πόλις, συνεληλύθασιν ὡς ἐμὲ ἀδελφαὶ τε καὶ ἀδελφιδαῖ καὶ ἀνεψιαὶ τοσαῦται, ὥστ' εἶναι ἐν τῇ οἰκίᾳ τεσσαρεςκαίδεκα τοὺς ἐλευθέρους· λαμβάνομεν δὲ οὔτε ἐκ τῆς γῆς οὐδέν οὔτε ἀπὸ τῶν οἰκιῶν. Χαλεπὸν μὲν οὖν ἐστιν, ὦ Σώκρατες, τοὺς οἰκείους περιορᾶν ἀπολλυμένους, ἀδύνατον δὲ τοσούτους τρέφειν ἐν τοιούτοις πράγμασιν.

2. Are Slaves more Useful than Freemen?

Ἀκούσας οὖν ταῦτα ὁ Σωκράτης· Τί ποτέ ἐστιν, ἔφη, ὅτι ὁ Κεράμων μὲν πολλοὺς τρέφων οὐ μόνον ἑαυτῷ τε καὶ τούτοις τὰ ἐπιτήδεια δύναται παρέχειν, ἀλλὰ καὶ περιποιεῖται τοσαῦτα, ὥστε καὶ πλουτεῖν, σὺ δὲ πολλοὺς τρέφων φοβεῖ, μὴ δι' ἔνδειαν τῶν ἐπιτηδείων ἅπαντες ἀπολησθε;



No. 3. ATHENIANS IN THE ATTIRE OF THE AGE OF PERICLES.
A Picture on a Vase.

Ὅτι νὴ Δί', ἔφη, ὁ μὲν δούλους τρέφει, ἐγὼ δὲ ἐλευθέρους.

Καὶ πότερον, ἔφη, τοὺς παρὰ σοὶ ἐλευθέρους οἴει βελτίους εἶναι, ἢ τοὺς παρὰ Κεράμωνι δούλους;

Ἐγὼ μὲν οἶμαι, ἔφη, τοὺς παρὰ ἐμοὶ ἐλευθέρους.

Οὐκοῦν, ἔφη, αἰσχρὸν τὸν μὲν ἀπὸ τῶν πονηροτέρων εὐπορεῖν, σὲ δὲ πολλῷ βελτίους ἔχοντα ἐν ἀπορίαις εἶναι;

Νὴ Δί', ἔφη· ὁ μὲν γὰρ τεχνίτας τρέφει, ἐγὼ δὲ ἐλευθερίως πεπαιδευμένους.

Ἆρ' οὖν, ἔφη, τεχνῖταί εἰσιν οἱ χρήσιμόν τι ποιεῖν ἐπιστάμενοι;

Μάλιστά γε, ἔφη.

Οὐκοῦν χρήσιμά γ' ἄλφιτα;

Σφόδρα γε.

Τί δὲ ἄρτοι;

Οὐδὲν ἧττον.

Τί γάρ; ἔφη, ἱμάτιά τε ἀνδρεῖα καὶ γυναικεῖα, καὶ χιτωνίσκοι καὶ χλαμύδες καὶ ἐξωμίδες;

Σφόδρα γε, ἔφη, καὶ πάντα ταῦτα χρήσιμα.

Ἔπειτα, ἔφη, οἱ παρὰ σοὶ τούτων οὐδὲν ἐπίστανται ποιεῖν;

Πάντα μὲν οὖν, ὡς ἐγῷμαι.

3. What can Freemen do?

Εἶτ' οὐκ οἶσθα, ὅτι ἀφ' ἑνὸς μὲν τούτων, ἀλφιτοποιίας, Ναυσικύδης οὐ μόνον ἑαυτόν τε καὶ τοὺς οἰκέτας τρέφει, ἀλλὰ πρὸς τούτοις καὶ ὗς πολλὰς καὶ βοῦς, καὶ περιποιεῖται τοσαῦτα, ὥστε καὶ τῇ πόλει πολλάκις λειτουργεῖν, ἀπὸ δὲ ἀρτοποιίας Κύρηβος τήν τε οἰκίαν πᾶσαν διατρέφει καὶ ζῇ δαψιλῶς, Δημέας δὲ ὁ Κολλυτεὺς ἀπὸ χλαμυδουργίας, Μεγαρέων δ' οἱ πλεῖστοι, ἔφη, ἀπὸ ἐξωμιδοποιίας διατρέφονται;

Νὴ Δί', ἔφη· οὗτοι μὲν γὰρ ὠνούμενοι βαρβάρους ἀνθρώπους ἔχουσιν, ὥστ' ἀναγκάζειν ἐργάζεσθαι ἃ καλῶς ἔχει, ἐγὼ δ' ἐλευθέρους τε καὶ συγγενεῖς.

Ἔπειτ', ἔφη, ὅτι ἐλεύθεροί τ' εἰσὶ καὶ

συγγενεῖς σοι, οἶει χρῆναι μηδὲν αὐτοὺς ποιεῖν ἄλλο ἢ ἐσθίειν καὶ καθεύδειν; Ἔμαθον δὲ, ἃ φῂς αὐτὰς ἐπίστασθαι, πότερον ὡς οὔτε χρήσιμα ὄντα πρὸς τὸν βίον, οὔτε ποιήσουσαι αὐτῶν οὐδέν, ἢ τοὐναντίον, ὡς καὶ ἐπιμεληθησόμεναι τούτων, καὶ ὠφεληθησόμεναι ἀπ' αὐτῶν; Ἐὰν δὲ αὐταῖς προστατήσῃς, ὄφελος ἔσῃ αὐταῖς τε καὶ σεαυτῷ.

Ἀλλά, νὴ τοὺς θεούς, ἔφη ὁ Ἀρίσταρχος, μοι δοκεῖς καλῶς λέγειν, ὦ Σώκρατες.

4. What the Dog said to the Sheep.

Ἐκ τούτων δὲ ἐωνήθη ἔρια· καὶ ἐργαζόμεναι μὲν ἠρίστων, ἐργασάμεναι δὲ ἐδείπνουν, ἱλαραὶ δὲ ἀντὶ σκυθρωπῶν ἦσαν· καὶ ἔλεγον τὸν Ἀρίστιππον μόνον τῶν ἐν τῇ οἰκίᾳ ἀργὸν ἐσθίειν. Καὶ ὁ Σωκράτης ταῦτα ἀκούσας ἔφη· Εἶτα οὐ λέγεις αὐταῖς τὸν τοῦ κυνὸς λόγον; φασὶ γάρ τὴν ὄϊν πρὸς τὸν δεσπότην εἰπεῖν· Θαυμαστὸν ποιεῖς, ὃς ἡμῖν μὲν ταῖς καὶ ἔριά σοι καὶ ἄρνας παρεχούσαις οὐδὲν δίδως, ὅ τι ἂν μὴ ἐκ τῆς γῆς λάβωμεν, τῷ δὲ κυνί, ὃς οὐδὲν τοιοῦτόν σοι παρέχει, μεταδίδως οὗπερ αὐτὸς ἔχεις σίτου. Τὸν κύνα οὖν ἀκούσαντα εἰπεῖν· Ναὶ μὰ Δία· ἐγὼ γάρ εἰμι ὁ καὶ ὑμᾶς αὐτὰς σώζων, ὥστε μητε ἀνθρώπους μήτε λύκους φοβεῖσθαι. Καὶ σὺ οὖν ἐκείναις λέγε, ὦ Ἀρίσταρχε, ὅτι ἀντὶ κυνὸς εἶ φύλαξ, καὶ διὰ σὲ οὐδ' ὑφ' ἑνὸς ἀδικούμεναι ἀσφαλῶς τε καὶ ἡδέως ἐργαζόμεναι ζῶσιν.

Consult Harper's *Classical Dictionary* and Smith's *Dictionary of Antiquities* on *Chiton, Himation, Chlamys* and *Exomis.*

Questions to be Answered in Greek

1. How did Aristarchos happen to have fourteen relatives in his house?
2. How is Ceramon able to support many and yet become rich?
3. Do free people also know how to do something useful?
4. What does Nausicydes make from his barley business?
5. How do most of the Megarians make their living?
6. Do free people learn what they know with the the idea of putting their knowledge into practice and helping themselves?
7. Were Aristarchos' relatives unhappy when idle and happy when at work?
8. Did they say Aristarchos was the only idle person in the house?
9. What story did Socrates bid Aristarchos tell them?
10. Tell the story.

Vocabulary of New Words

ἄλφιτα, ων, coarse meal, barley meal.
ἀνεψιά, ᾶς, cousin.
ἀπόλλυμαι, perish, from *ἀπόλλυμι.*
ἀπορία, ας, want, difficulty.
ἀριστάω, breakfast.
ἀρνάς, lambs.
ἄρτος, ου, loaf of bread, bread.
βαρύς, εῖα, ύ, heavy, grievous.
βοῦς, βοός, ox, cow.
γυνή, γυναικός, woman, wife.
δειπνέω, dine.
δεσπότης, ου, master.
εἶτα, then, thereupon.
ἐπιμελέομαι, practice.
ἔριον, ου, wool.
ἐσθίω, eat.
ἡδύς, εῖα, ύ, sweet.
ἱλαρός, ά, όν, cheerful.
ἱμάτιον, ου, cloak, mantle.
κουφίζω, lighten.
λειτουργέω, perform and pay for public services.
μεταδίδωμι, share.
οἰκία, ας, house.
οἶς, οιος, sheep.
ὁράω, see.
περιποιέω, make over and above, gain.

πλουτέω, *be rich.*
πονηρός, ά, όν, *toilsome, base.*
προστατέω, *manage for.*
σκυθρωπος, ον, *sad-looking.*
στασιάζω, *rebel, disagree.*
σώζω, *save.*
τεχνίτης, ου, *artisan.*
τρέφω, *nourish, support.*
ὗς, υιός, *swine.*
φύλαξ, ακος, *guard.*

Latin Lessons for the Ninth Grade

No. 101. A ROMAN SCHOOL.
A Wall-Painting from Herculaneum.

Number 1

Latin I

1. Puella Romana in scholā discit.
2. Puella in tabellā litteras scribit.
3. Puellæ Romanæ in scholā non ludunt.
4. Servæ puellis in scholam tabellas et capsas ferunt.
5. Tabellæ puellarum erant ligneæ et cereæ.
6. Puellæ in sellis sedēbant et litteras in ceris scribēbant.
7. Puellæ Romanæ litteras Græcas interdum discēbant et diligēbant.
8. Schola Romana primā horā incipit.
9. Tabellæ puellarum erant litterarum vacuæ primā horā, sed plenæ tertiā horā.
10. Ferulæ longæ erant in Scholis Romanis.
11. Puellæ Romanæ in viis et areis interdum ludēbant.
12. Puellæ Romanæ poetas interdum discēbant.

Questions to be Answered in Latin.

1. At what hour does the American school begin?
2. Do the American girls study Latin and Greek?
3. Do the American girls play in the streets and squares?
4. Did slave-women carry the boxes and tablets of the Roman girls?

No. 102. A GREEK SCHOOL.
A Vase-Painting from the Age of Pericles.

5. On what did the Roman girls write?

6. Of what materials were the tablets of the Roman girls?

7. Were there rods in the Roman schools?

8. Were there seats in the Roman schools?

9. Did the Roman girls study Greek?

10. Did they study the poets?

Latin II

1. Matrona Romana pecuniam in arcam ponit.

2. Matrona Romana in arcā pecuniam includēbat.

3. Matrona ex arcā pecuniam capit.

4. Matrona Romana non filiæ parvæ sed servæ adultæ pecuniam dat.

5. Servæ Romanæ ad aquam in viis et areis urnas vacuas ferēbant.

6. Servæ domum urnas plenas aquæ ferunt.

7. Matronæ Romanæ urnas non ferebant.

8. Candelæ Romanæ erant cereæ.

9. Villa Romana candelas paucas sed lucernas multas habēbant.

10. Serva in mensam puellæ capsam ponit.

Questions to be Answered in Latin

1. Did the Greek slave put the girl's box on the table?

2. Did the Greek slave put the boy's box on the table?

3. Did the slave-men put the money-box on the table?

4. Where did the Roman ladies put their money?

5. Did the Roman lady give money to her small daughter?

6. To whom did she give the money?

7. Did the Roman lady give money to her small son?

8. To whom did she give the money?

9. How did the Romans light their houses?

10. Did they have more candles or more lamps?

Latin III

1. Puella in ludum primā horā ibat.

2. Puellæ tabellam serva ferēbat.

3. Puellæ tabellam serva dabat.

4. Puellam in ludum serva ducēbat.

5. Puella, isne in ludum?

6. Puellā totus ludus confīdit.

7. Puellæ in ceris scribēbant.

8. Puellārum ludus non erat magnus.

9. Puellis pecuniam matrona non dat.

10. Puellas domum servæ ducēbant.

11. Puellæ, quo curritis?

12. Puellis matrona Romana confidēbat.

13. Puer et puella in ludum ibant.

14. Pueri et puellæ tabellæ erant cereæ.

15. Puerō et puellæ tabellas magister dabat.

16. Puerum et puellam in ludum matrōna mittit.

17. Puer et puella, discitisne poētas Græcas?

18. Puerō et puellā matrōna confīdit.

19. Pueri et puellæ litteras Græcas diligunt.

20. Puerōrum et puellārum ludus erat parvus.

21. Pueris et puellis ferulæ erant interdum.

22. Pueros et puellas in aream magister mittit.

23. Pueri et puellæ, diligitisne poētas?

24. Pueris et puellis magister confīdit.

25. Puellæ Romānæ litteras scribunt.

26. Pueri Romāni litteras scribunt.

27. Serva Græca puellam Romānam domum ducit.

28. Servus Græcus puerum Romānum domum ducit.

29. Servæ Græcæ puellas Romānas in ludum ducēbant.

30. Servi Græci pueros Romānos in ludum ducēbant.

Latin IV

1. Pueri et puellæ in ludo litterārum geographiam et historiam et grammaticam discēbant.

2. Libros de geographiā et historiā et grammaticā non habebant, sed in libris poetārum geographiam et historiam et grammaticam legēbant et discēbant.

3. Ludus tabulam mundi interdum habēbat.

4. Pueri Romāni numeros discēbant.

5. Cicero et alii pueri tabulas duodecim discēbant.

6. Magister in pergulā pueros docēbat.

7. Pueri lucernas in ludum interdum ferēbant.

8. Servi librarii libros scribēbant et in librario vendēbant.

Questions to be Answered in Latin

1. At what hour did the Roman school begin?

2. Did the Roman boys write Latin?

3. Did they study Greek?

4. Did they read the poets?

5. Did they study geography, history, and grammar?

6 Did they have books on geography, history, and grammar?

7. How did they study these subjects?

8. Did they have maps in the school?

9. Did they study arithmetic?

10. What famous boy studied the Twelve Tables of Roman law?

11. Did the other boys study the tables?

12. How were the Roman books made, and by whom?

13. Where were they sold?

Number 2

Latin V

1. Civis Romanus in Foro et viis togam supra tunicam gerēbat.

2. Nec Gallus nec servus togam gerēbat.

3. Romani Galliam cisalpinam togātam, Galliam transalpinam bracātam appellābant quia Galli bracas gerēbant.

4. Puer Romanus supra tunicam togam prætextam gerēbat.

5. Servi tunicas gerēbant.

6. Servi in brumā supra tunicas pænulas gerēbant.

7. Cives Romani dum rus eunt, supra tunicas pænulas gerēbant.

8. Togæ Romanæ erant laneæ.

9. Togæ prætextæ erant albæ et purpureæ.

10. Puer Romanus, postquam annos quattuordecim vixit, togam prætextam et bullam ponēbat et togam puram aut virīlem sumēbat.

11. Cives Romani dum honores petunt, togas candidas gerēbant.

Questions to be Answered in Latin

1. What did the Roman citizens wear in the Forum and street?

2. Did the Greek or Gallic slaves wear togas?

3. What did the Gauls wear?

4. What did the Roman boys wear?

5. What did the slave sometimes wear over his tunic?

6. When did the Romans wear the same wraps?

7. What was the color and material of the toga prætexta?

8. When did the boys leave off their child's dress and take the man's dress?

9. What color was the toga worn by a candidate for office?

Vocabulary of New Words

gero, 3, *bear, wear, manage.*
quia, *because.*
appello, 1, *call, name.*
bruma, ae, *winter.*
rus, ruris, *country, into the country.*
dum, *while.*
postquam, *after.*
annus, i, *year.*
quattuordecim, *fourteen.*
vivo, 3, vixi, *live, lived.*
pono, 3, *lay down, place, put.*
sumo, 3, *take, assume.*
honor, oris, *honor, office.*
peto, 3, *seek.*

Latin VI

1. Matrona Romana supra tunicam stolam gerēbat et, dum in viā est, pallam amiciēbat.

2. Stolæ pallæque erant laneæ.

3. Tunicæ erant laneæ aut lineæ.

4. Matrona filiæque Romanæ cum servis et togas et tunicas et stolas et pallas domi faciēbant.

5. Puellæ Romanæ texere et nēre discēbant.

6. Omnīs vestīs omnium familiārum Romanārum feminæ Romanæ plerumque faciēbant, itaque feminæ omnes erant sedulæ.

7. C. Iuli Cæsaris Octaviāni etiam vestīs omnīs filia et aliæ feminæ suæ familiæ conficiēbant.

Questions to be Answered in Latin

1. What did the Roman ladies wear at home? On the street?

2. What was the material of their clothing?
3. Who made the clothing?
4. What did the Roman girls learn to do?
5. Why were the Roman women busy?
6. What famous man usually wore clothes made by the women of his household?

Vocabulary of New Words

amicio, 3, *throw around, wrap around.*
vestis, is, f., *clothing, garments.*
omnis, *all.*
femina, ae, *woman.*
plerumque, *generally, usually.*
sedulus, a, um, *busy.*
suus, a, um, *his own, her own, its own, their own.*
conficio, 3, *make completely.*

Latin VII

A Bad Schoolmaster Punished

Dum Camillus cum exercitu Romano urbem Falerios obsidet, ludi magister pueros Faliscos in castra Romana duxit. Camillus perfidiam magistri non dilexit. "Arma habemus," dixit, "non adversus, pueros sed adversus viros armātos." Postquam magistri perfidi bracchia post tergum restrinxit virgas dedit pueris, qui suum magistrum in urbem Falerios ēgērunt. Statim Falisci, beneficio non armis victi, portas Romanis aperuērunt.

Vocabulary of New Words

urbs, urbis, f., *a city.*
obsideo, 2, *sit down against, besiege.*
Castra, orum, *camp.*
perfidia, *treachery.*
perfidus, *treacherous.*
arma, orum, *arms, weapons.*
armātus, a, um, *armed.*
adversus, prep., *against.*
post, prep., *after, behind.*
tergum, i, *back.*
bracchium, i, *arm.*
virga, ae, = ferula.
ago, 3, ēgi, *drive, drove.*
statim, *at once.*
porta, ae, *gate.*
beneficium, i, *kindness.*
victus, a, um, *conquered.*
aperio, 4, aperui, *open, opened.*

To be Answered Orally in Latin

1. Quis fuit Camillus?
2. Quid fēcit magister Faliscus?
3. Quid dixit Camillus?
4. Quid fēcit Camillus?
5. Quid fēcērunt pueri Falisci?
6. Quid fēcērunt viri Falisci?

Latin VIII

The Tragic Fate of a Roman Schoolgirl

Dum Decemviri tabulas duodeceim scribunt, Virginia, puella Romana, in Forum ibat, namque ibi in pergulā litterārum ludi erant. Appius Claudius, unus ex Decemviris, eam puellam amavit, quam ubi in alio modo capere non potuit, affirmāvit Virginiam sui clientis esse servam. Multi ad clamorem nutrīcis puellæ concurrēbant et pater suus advēnit; sed ubi nihil auxiliī adversus Appium Claudium vīdit, cultro suam filiam interfēcit.

Vocabulary of New Words

unus, a, um, *one.*
amo, 1, avi, *love, loved.*
modus, i, *way, manner.*
possum, potui, *am able, was able.*
affirmo, 1, avi, *affirm, assert.*
cliens, entis, *retainer, dependent.*
clamor, oris, *cry.*
nutrix, īcis, *nurse, attendant.*
pater, tris, *father.*
video, 2, vīdi, *see, saw.*
interficio, 3, fēci, *kill.*

Questions to be Answered Orally in Latin

1. Quid faciebant Decemviri?
2. Cur Virginia in Forum vēnit?
3. Quid fēcit Appius Claudius?
4. Quid fēcit nutrix puellæ?
5. Quid fēcit pater?

Applied Algebra

George W. Myers

In our study of the equation we have already had frequent need for the resolution of numbers into factors. Many type forms of algebraic expressions will be met repeatedly in our later work with equations, and in many cases a knowledge of their factors will be of the greatest advantage. A degree of skill in the detection of factors is the surest possible guarantee of pleasurable and rapid progress in all advanced mathematical work. An intimate acquaintance with the difficulties of hundreds of students of applied mathematics convinces the writer that an imperfect understanding of the principles of factoring is one of the two or three most fruitful sources of trouble in all algebra. The reason for this is, however, not to be sought in the difficulty of the subject; but rather in the incessant recurrence of the necessity for a few ideas which are badly confused in the student's mind.

To illustrate the great advantage of the use of factoring a few exercises are given here.

Exercises

(1) Verbal statement. The difference of two numbers is 1, and the difference of their squares is 9; find the numbers.

Symbolic statement. $x-y=1$ and $x^2-y^2=9$; required x and y.

(2) Verbal statement. The sum of the reciprocals of two numbers and also the difference of the reciprocals of their squares is 5; find the numbers.

Symbolic statement. $1/x+1/y=5$ and $1/x^2-1/y^2=5$; find x and y.

(3) Verbal statement. The sum of two numbers is 5 and the sum of their cubes is 35; find the numbers.

Symbolic statement. $x+y=5$ and $x^3+y^3=35$; find x and y.

(4) Verbal statement. The sum of the cubes of two numbers is 126 and the sum of their squares diminished by their product is 21; find the numbers.

Symbolic statement. $x^3+y^3=126$ and $x^2-xy+y^2=21$; find x and y.

(5) Verbal statement. The difference of the 5th powers of two numbers is 242 and the difference of the numbers is 2; find the numbers.

Symbolic statement. $x^5-y^5=242$ and $x-y=2$; find x and y.

(6) $\frac{5x+1}{3}+\frac{19x+7}{9}-\frac{3x-1}{2}=\frac{7x-1}{6}$; find x.

(7) $\frac{2x+1}{2x-1}-\frac{8}{4x^2-1}=\frac{2x-1}{2x+1}$; find x.

(8) $\frac{4}{x+2}+\frac{7}{x+3}-\frac{37}{x^2+5x+6}=0$; find x.

(9) $\frac{x}{a-b}-\frac{5a}{a+b}=\frac{2bx}{a^2-b^2}$; find x.

(10) $\frac{(a^2+2ab+b^2)}{a+b}x+\frac{3a^2-3b^2}{a-b}x-\frac{2a^3+2b^3}{a^2-ab+b^2}x=\frac{ac+bc-ad-bd}{c-d}$; find x.

(11) $\frac{x^3-y^3}{x^2-xy+y^2}\times\frac{x^2+y^2}{x^2+xy+y^2}\times\left(1+\frac{y}{x-y}\right)=x+y$; find x.

REMARK I.—Require the student to supply the verbal statements for 6, 7, 8, and 9. In practical life the problems to be solved are usually given in their verbal form, and much attention should be given to training the student to pass easily from the verbal to the symbolic form of statement and *vice versa*.

REMARK II.—It is intended that the teacher, not the pupil, shall solve these problems to illustrate their simplicity by the aid of factoring.

Attention should be called to the fact that the first step in the solution of all of the first five exercises is to divide the equations, member by member, and that this division, by the aid of factoring, can be performed by *inspection*.

Factoring. The subject of factoring may be developed from three simple principles:

Definition: A polynomial is an algebraic expression containing two or more terms.

Principle I.—A factor of every term of any polynomial is a factor of the polynomial.

Illustration: $12+27-9=3\times4+3\times9-3\times3=3(4+9-3)$; $ax+ab-ac=a(x+b-c)$, etc.

Prove this principle.

Principle II.—The difference of any two numbers is a factor of the difference of any two positive integral powers of the numbers.

Illustration: $a-b$, $c-d$, $x-y$, $a-z$, $y-3$, are factors respectively of a^3-b^3, c^4-d^4, x^2-y^2, a^5-z^5, y^4-81.

Prove this principle.

Principle III.—If an algebraic expression becomes 0 when any number in it is replaced by another, the difference between the two numbers is a factor of the expression.

Illustration: If, in $7^3-3\times7^2+4\times7-4$ (=220), seven is replaced by 2, we have $2^3-3\times2^2+4\times2-4=0$. Hence $7-2=5$ is a factor of 220. If in $a^2-2ab+b^2$, a is replaced by b, the polynomial becomes 0. Hence $a-b$ is a factor of it.

Prove this principle.

Show that all the typical forms such as $a^2+2ab+b^2$, a^3-b^3, x^2+ax+b, etc., as well as the troublesome forms, x^n-y^n, x^n+y^n, come under this principle III.

Fractions.

Exercises 6 to 11 above are fractional in form. Before the value of the unknown number can be found the equation must be cleared, or freed, of the fractions. Most equations met with in practice involve fractions. In mechanics, the problems to be solved usually require as a preliminary step the differentiation, or integration, of some expression, and then the reduction and simplification of the results through the principles underlying fractions in algebra. The preliminary step is usually performed by the student with but little difficulty; the simplifying of the fractional and radical forms is the source of the greatest confusion. Some of the principles and notions which constitute the groundwork of the mechanics of materials are given here to show the practical importance of knowing how to treat equations which contain fractions. Sufficient explanation of the meaning of the forms used will be given to make the student feel their significance.

A study of *involution* and *evolution* will be made before factoring is completed.

Mechanics of Materials.

In designing beams the following equation is fundamental:

$$S=\frac{Mc}{I},$$

where S denotes the unit-stress in the fiber, M, the maximum statical moment, c, the distance from the remotest fiber of the section of the beam to the neutral plane, and I is the moment of inertia of this section.

I and c are here tabulated for beams of various forms and dimensions of cross-section.

Cross-section.	Dimensions.	Value of I.	Value of c.	Remarks.
Rectangle	Base, b; depth, d.	$\frac{bd^3}{12}$	$\frac{d}{2}$	
Circle	Diameter, d.	$\frac{\pi d^4}{64}$	$\frac{d}{2}$	Circle solid.
Triangle	Base, b; depth, d.	$\frac{bd^3}{36}$	$\frac{2}{3}d$	
Ellipse	Axes, a and b.	$\frac{4ab^3}{64}$	$\frac{b}{2}$	b vertical.
Square	Side, d.	$\frac{d^4}{12}$	$d\sqrt{\frac{1}{2}}$	Diagonal vertical.
I-beam	Base, b; depth, d.	$\frac{bd^3-(b-t')(d-2t)^3}{12}$	$\frac{1}{2}d$	Flange, t; web, t'.
T-beam	Base, b; depth, d; area, A.	$\frac{bd^2-(b-t')(d-t)^2}{3}-Ac^2$	$\frac{\frac{1}{2}t'd^2+t(b-t')(d-\frac{1}{2}t)}{t'd+t(b-t')}$	Flange, t; web, t'.
Circular	Diameters, d and d'.	$\frac{\pi(d^4-d'^4}{64}$	$\frac{d}{2}$	Hollow.

To see the use of the foregoing, design a hollow circular wrought-iron beam of 12′ span to carry a uniform load of 320 lbs. per lineal foot, thickness of metal to be ¾″.

Here we have $d' = d - \frac{3}{8}''$ and taking the values of I and c for this type of beam from the table, and writing the equation (A) in the form $I = \frac{Mc}{S}$ and putting $M = 320 \times 6 = 1920$, $S = 10000$ (the safe unit-stress for wrought iron):

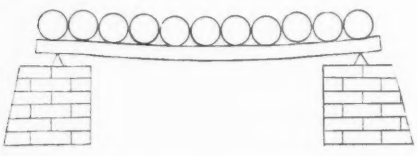
$$\frac{\pi}{64}\left(6d^3 - \frac{27}{2}d + \frac{27}{2}d - \frac{81}{16}\right) = \frac{1920 \times 3 \times 12d}{2 \times 10000}$$

and this readily simplifies to

$$96d^3 - 81d^2 - 920d - 81 = 0,$$

and from this cubic d must be found. By the methods of higher algebra d is found to lie between 5.1 and 5.2.

A few more practical equations will be added here to show the range of algebraic work needed for the study of applied mechanics. The mechanical meaning of these equations will be fully explained and a careful algebraic study of them will be made.

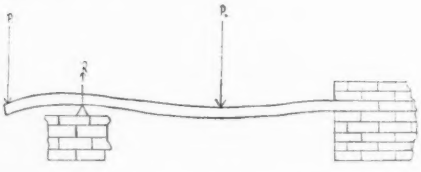


For a simple beam, uniformly loaded, we have:

$V = -wx + \frac{1}{2}wl$ (equation for vertical shear).

$M = \frac{1}{2}wlx - \frac{1}{4}wx^2$ (equation of moments).

$y = \frac{w}{24EI}(-x + 2lx - lx)$ (equation of the elastic curve).

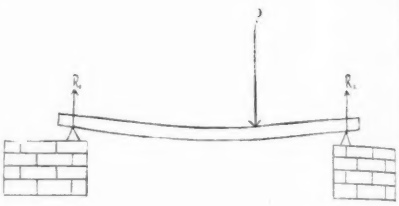


For a simple beam with concentrated loading:

$V = -wx + R_1 - \Sigma P$ (equation for vertical shear).

$M = Rx - P_1(x - a)$ (equation of moments).

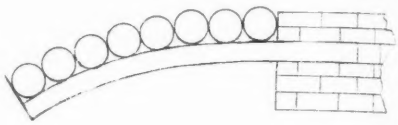
$y = \frac{P}{48EI}(4x^3 - 3l^2x)$ (equation of the elastic curve).



Load distant kl from left end.

$y = \frac{1}{EI}(\frac{1}{6}Rx^3 + C_1x + C_2)$, elastic curve on left of load.

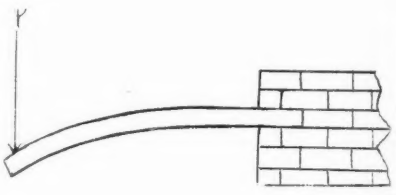
$y = \frac{1}{EI}(\frac{1}{6}Rx^3 - \frac{1}{6}Px^3 + \frac{1}{2}Pklx^2 + C_3x + C_4)$, for curve on right.



For a cantilever beam, uniformly loaded:

$M = -Px - \frac{1}{2}wx^2$ (equation of moments).

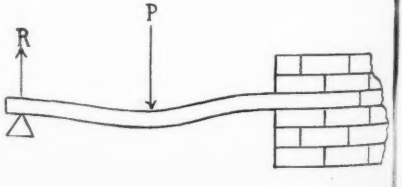
$y = \frac{4wl^3}{24EI}x - \frac{w}{24EI}x^2$ (equation of the elastic curve).

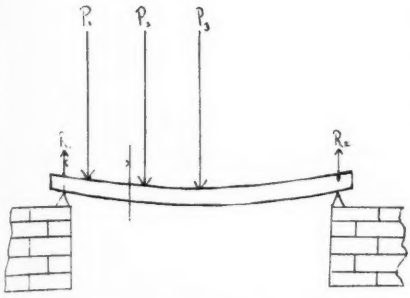


For a cantilever with a single load P:

$y = \frac{P}{6EI}(3l^2x - x^3)$ (equation elastic curve).

Point out which of the foregoing equations are included in the type forms of November outlines and which are cubics and quartics, and give their types.





The following enumeration includes the values of the maximum deflection, Δ, in beams of various types:

For a cantilever loaded at the end with W: $\Delta = \frac{1}{3} \cdot \frac{Wl^3}{EI}$.

For a cantilever loaded uniformly with W: $\Delta = \frac{1}{8} \cdot \frac{Wl^3}{EI}$.

For a simple beam loaded at the middle with W: $\Delta = \frac{1}{48} \cdot \frac{Wl^3}{EI}$.

For a simple beam uniformly loaded with W: $\Delta = \frac{5}{384} \cdot \frac{Wl^3}{EI}$.

For beams to be of uniform strength throughout it is necessary that the cross-sections shall vary with the fiber stress.

For a simple beam loaded at the middle and of constant breadth:

$$d^2 = \frac{3P}{Sb} x \text{ (parabolic profile).}$$

For same with constant depth:

$$b = \frac{3P}{Sd^2} x \text{ (triangular or trapezoidal plan).}$$

Same beam uniformly loaded and constant breadth:

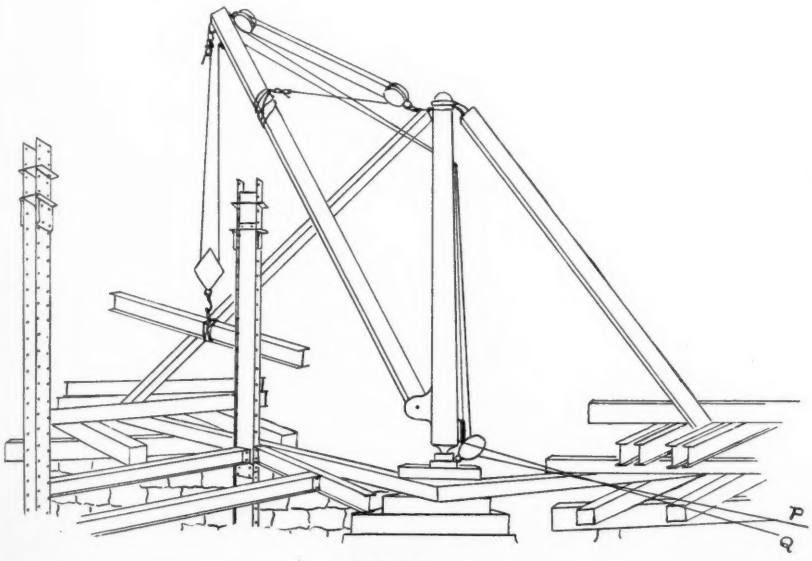
$$d^2 = \frac{3w}{Sb} x \text{ (parabolic profile).}$$

Same beam uniformly loaded and of constant depth:

$$b = \frac{3w}{Sd^2}(lx - x^2) \text{ (parabolic plan).}$$

Now make a full study of fractions, using fractional equations largely. In connection with this study bring out the real motive of greatest common divisor and least common multiple and teach these subjects here. Prove that the familiar method of successive division gives the greatest common divisor.

We shall next develop the theory of exponents and logarithms, the latter immediately after the former.



DERRICK.

Applied Trigonometry

The force P raises, lowers, and supports the boom while Q raises and lowers the load. If the load supported by the derrick in the cut is a 12" steel I beam, 20′ long, and weighing 50 lbs. to the running foot, what members of the derrick are in tension? In compression? In shear?

Suppose the boom to be 40′ long, the guys to be 42′, and the upright 30′, what are the strains in the ropes, in the boom, and in the guys when the boom is inclined to the upright at an angle of 30°? Of 45°? Of 60°? Of 90°?

Answer the last question (a) when the boom is in the vertical plane of either guy and the upright, (b) when the vertical plane of the boom and upright is midway between the planes of the guys and the upright.

With each of the inclinations of the boom mentioned in the next to the last question, what is the horizontal thrust at the foot of the upright?

What are the forces tending to separate each of the two pulley-blocks at the base of the upright from the upright?

If the boom is of pine and is square in section, what dimensions should it have to carry the load with a factor of safety of 3? (Use for the ultimate compressive strength of pine 8000 lbs. per square inch.)

If the section is 14" square, what is the factor of safety?

If the maximum load is a 12" steel I beam, weighing 50 lbs. per running foot, what is the factor of safety?

For the inclinations of the boom to the upright mentioned above what would the strains be if the I beam were replaced by a block of granite 6′×5′×4′? (Granite weighs on the average about 170 lbs. per cubic foot.)

Suppose a green pine tree with dense foliage to be 50′ tall, the butt 18" in diameter, and the distance from the ground to the lower limbs 8′. Suppose the widest part of the bowl is 14′ in diameter. What will be the moment of the force of a wind blowing against the tree at the rate of 100 miles per hour about a section 2′ above the surface of the ground?

NOTE.—This velocity, which is the maximum value used by architects, produces a pressure of 50 lbs. per square foot.

What must be the stress in the fibers of the section indicated to resist overturning?

Taking the ultimate tensile strength of green pine to be 12,000 lbs. per square inch, would the tree break off at the section under the force of such a storm?

Numerous trigonometric exercises will be obtained from the exercises at the end of *Applied Mathematics* in the November COURSE OF STUDY.

Pedagogic School

ALGEBRA FOR THE SEVENTH AND EIGHTH GRADES

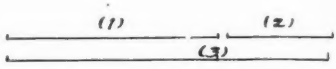


FIG. 1

1. If line 1 is 1 inch long and line 2 is ½ inch long, and when laid down along line 3, as shown in the figure, they reach just as far as line 3, how long is line 3?

Direction: Write your full answer in symbols, thus:

1 inch + ½ inch = 1½ inches.

FIG. 2

2. The length of one line is a inches, of another is b inches, and of a third is c inches. When the first two are put on the third, as in the figure, they exactly cover it. How long is c? Write your answer in symbols as in Exercise 1. This is called adding the lines.

How would you subtract a and b?

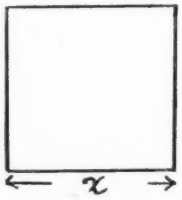


FIG. 3

3. One side of the square is x. How long is a string that will just reach around it?

REMARK.—Five times one x is written $5x$ and is read five x.

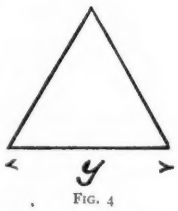


FIG. 4

4. The sides of the triangle are all equal to y (equilateral triangle). How long is a line that will just reach around it?

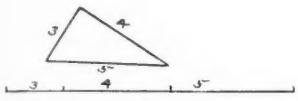


FIG. 5

5. If the sides are as shown and the triangle broken at a corner and straightened out into a line, how long would the line be? Write your answer in symbols.

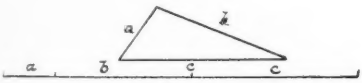


FIG. 6

6. The sides of the triangle are of the lengths shown in the figure. If the triangle were opened at one corner and straightened out into a line, how long would the line be?

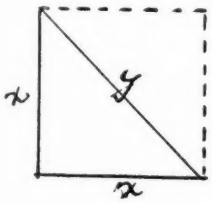


FIG. 7

7. Sides as shown in the figure. How far is it around the triangle?

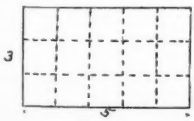


FIG. 8

8. How far is it around the figure?

9. What is the area?

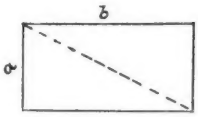


FIG. 9

10. What is the area?

11. What is the area of the oblong? Cut it with a diagonal. What is the area of one part?

REMARK.—The product of two different letters is indicated by writing them side by side. Thus xy means the product of x and y.

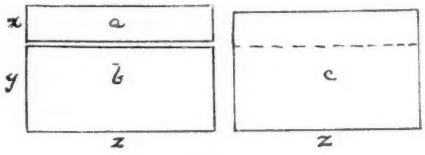


FIG. 10

12. The two oblongs a and b are put together into one as indicated. How high is c?

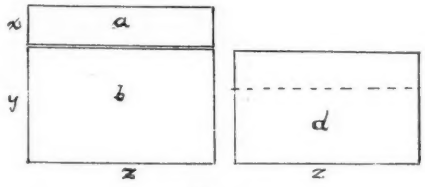


FIG. 11

13. If an oblong as large as a is cut from the oblong b as shown, leaving oblong d, how high is d?

REMARK.—Remember we indicate the difference of 6 and 2 thus: 6−2.

14. What is the area of a? of b? of c? of d?

REMARK.—5 times x is written $5x$.

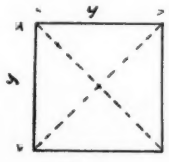


FIG. 12

15. What is the area of the square?

REMARK.—$a \times a$ is written a^2.

16. Cut the square across with a diagonal. What is the area of one part? Of the other part?

17. Cut it across with another diagonal. What is the area of one of the four parts formed?

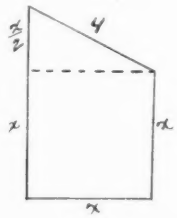


FIG. 13

18. How far is it around this figure? How long is the longest side? What is the area of the figure?

Definition: The expression a/b means the quotient of a divided by b.

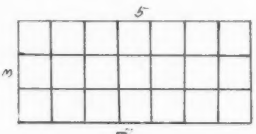


FIG. 14

19. What part of the oblong is one horizontal row of squares? One vertical row? What part of the oblong is one small square?

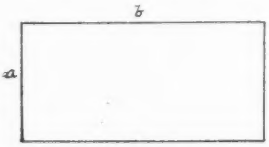


FIG. 15

20. What part of the oblong is one horizontal row of square units? One vertical row? What part is one square unit? How far around the oblong?

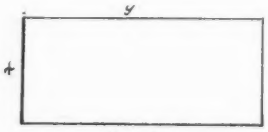


FIG. 16

21. What part of the oblong is one square unit? One horizontal row of them? One vertical row? How far around the oblong?

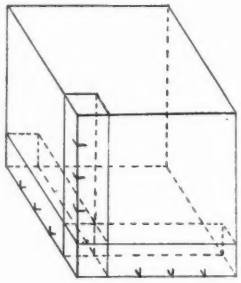


FIG. 17

22. What is the volume of the cube? How many small squares in one face? How many small cubes in one horizontal layer? What part of the large cube is one small cube?

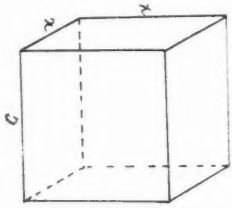


FIG. 18

23. What is the volume? What is the area of a face? What part of the large cube is one small cube?

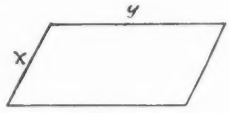


FIG. 19

24. How far is it around the parallelogram? How far is it half way round? One-third of the way round? One ath of the way round?

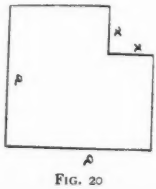


FIG. 20

25. What is the perimeter of the figure?

Definition: Perimeter is the sum of the boundary lines.

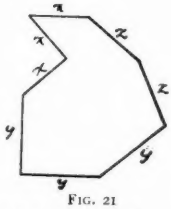


FIG. 21

26. What is the perimeter?

Definition: The parts of your expression which are connected by the plus signs are called the *terms*. They are also called terms when one or more of the signs are minus.

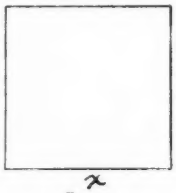


FIG. 22

27. Measure the perimeter of the square with a scale calling ¼" = 1', and write an equation to find x. What is the value of x? Of $3x$?

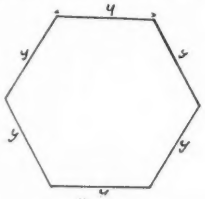


FIG. 23

28. Measure the perimeter and find y.

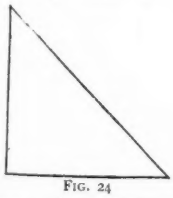


FIG. 24

29. If the area of the right triangle is 32, what is x? (See Exercise 15.)

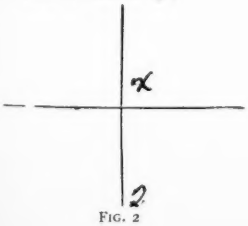


FIG. 2

30. Supposing the two lines to intersect so that all the four angles are equal; denoting one of the angles by x, what will represent the sum of all four?

NOTE.—In this case the lines are said to be *perpendicular* and the angles are right angles.

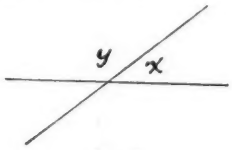


FIG. 26

31. Draw on paper two lines not perpendicular. Cut the paper along the lines and notice what angles will fit over one another. If the angles are designated as in the drawing, what will designate the sum of all four?

What will represent the sum of each pair of equal angles?

What will represent the sum of the two angles below the horizontal line?

What will represent the sum of any two angles lying on the same side of either line?

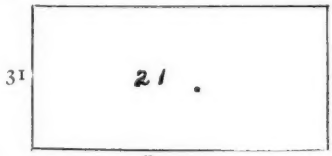


FIG. 27

32. The area of the oblong is 21 square inches and the height is 31 inches. What is the length of the base?

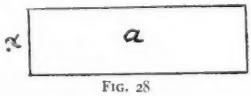


FIG. 28

33. The area of the oblong is a square inches and the height is x. How long is the base?

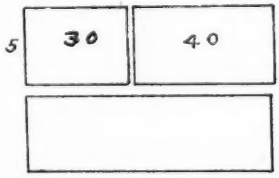


FIG. 29

34. The area of the first oblong is 30 square inches and of the second 40 square inches. Both are 5 inches high. The two are pushed together into one oblong with the same height. How long is the large oblong?

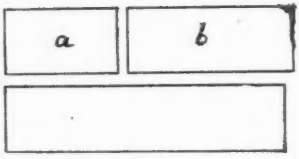


FIG. 30

35. If the area of the first oblong had been a of the second b, and if the altitude of all had been c, how long would the third oblong have been?

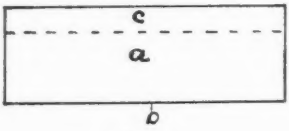


FIG. 31

36. If from an oblong whose base is b inches and whose area is a square inches, a strip is cut off parallel to the top, whose area is c square inches, how high will the oblong be which is left? How broad is the strip?

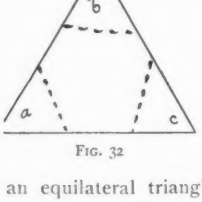


FIG. 32

37. Draw an equilateral triangle. With a protractor measure one of the angles (corners) and fit angle a over angle b. Which is the larger? Write what your experiment proves in symbols. Fit angle a over angle c. How do they compare in size? Symbolize what your exponent shows. Both taken together show what?

REMARK.—Study your protractor and notice its shape; where the center is; what part of a full circle it covers; how it is graduated.

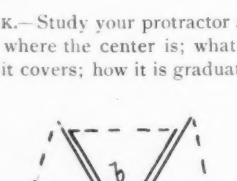


FIG. 33

38. Place the loose corners of the triangle of Example 36 as shown here with their vertices all at a point: how much of the plane around the point will they cover? How many degrees? What equation does this suggest?

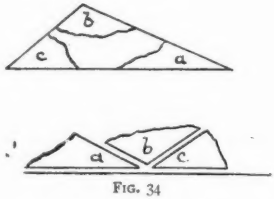


FIG. 34

39. Draw on paper a triangle of any irregular shape and cut, or tear, off the angles. Place these angles around a point o as shown. What part of the plane about the point do they fill? Denoting the angles as in the figure, write an equation for the sum of the angles in degrees.

40. Repeat this operation for several triangles of various shapes. What is the sum of all the angles of any triangle? Letting the angles of any triangle be denoted by a, b and c, what equation can you write for their sum?

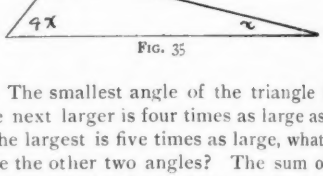


FIG. 35

41. The smallest angle of the triangle is x. If the next larger is four times as large as this and the largest is five times as large, what will denote the other two angles? The sum of all the angles will be denoted by what? To how many degrees is this equal?

42. From what has been said can you tell how many degrees there are in the sum of the two angles of the figure? Call the small angle x. What will represent the large one? If the large one be called y degrees, how many degrees in the small one?

Definition: When the sum of two angles is equal to 180°, each angle is said to be the supplement of the other.

43. What is the supplement of 60°, of 100°, of 80°, of 67°, of y degrees? Of a degrees? Of $x+y$ degrees?

44. Referring to Exercise 40, can you find all three angles of a triangle if the largest is three times the smallest and the second largest is twice the smallest? Denote the smallest angle by x.

The Library in the School

Irene Warren Frances Simpson

It is always difficult to outline any subject in a general way, and so it is with the subject of school libraries, their function in the schools, and relations to other libraries. As there are no two people or communities alike, so there are no two schools and no two libraries with exactly the same needs. There are, at present, many school libraries of from three hundred to one thousand volumes, tucked off in dark corners or shelved in the principal's office. The books are in bad condition, the editions are out of date, there is no plan of classification, no catalog or index, and no attempt to put the books to their best use. Moreover, there generally seems to be a difficulty in obtaining funds to keep a good library in working order. The question then arises, Should there be a permanent collection of books permanently located in a school?

Certain books are at all times necessary for use in the same grade; such books we will call reference books. In the primary grades these would be few, but they increase in number as new subjects are taken up. Every room should at least have a good dictionary and cyclopedia. These should be owned by the school board. A number of copies of the same books forming sets of books used for supplementary reading should also be owned by the Board of Education. By a little adjustment of the curriculum it would be possible to furnish considerable variety of reading without great duplication.

There are still a great many books necessary for school use. The next problem is to find out what state and city privileges are possible. The laws regarding school libraries vary in the different states. It is recommended that a careful examination of those in Illinois, Wisconsin, and New York be made. In a number of the states there are library commissions, where information regarding the establishment, maintenance, and organization of libraries can be obtained. The library commissions have charge of the traveling libraries, which may be a great help, especially to schools in country districts.

In the cities the closest possible relation should exist between the public library and the public school. At the present time this relationship varies widely in different cities. It is universally admitted that a close relationship is advantageous, and that not until the public library is considered a part of the great educational plan will it accomplish its best work. In some cities one book for each child in each room is sent from the public library and allowed to remain a term if desired, or to be exchanged when through with. It seems economical to have the general collections furnished by the public library because the public libraries are open the year round from early morning until late in the evening. This means that while the books are in good condition and the editions are in date a larger number of people can be served. The library force is also able to classify, catalog, and put the collection in better shape for use. It is impossible to more than touch on the great possibilities of the development of the relationship between schools and libraries in this outline. A whole number will be devoted to it later.

The first problem in the establishment of a school library is its function in the school and the community. The first step is to ascertain whether there is a public library in the town and what assistance it will give; what private libraries are available for the students' use; and what the general condition of literature is in the homes of the students. These three points must widely influence the choice of books and the regulations regarding their use.

The necessity for libraries in institutions for higher learning has been granted from the beginning, at least in this country, since the ten Connecticut ministers contributed the forty volumes for the founding of Yale University; but it is within comparatively recent years that libraries have been considered necessary for secondary and graded schools. The collections are still small, and therefore often not seriously considered, in spite of the fact that the less money a school has to put into its library, the more carefully the books should be selected. A small library should only be despised when it contains inferior books, or is not used to a good advantage. The smaller the collection the more carefully it should be catalogued and analyzed and made to do the greatest possible work.

The books should be shelved where they are easily accessible to the children. The library should be open as much as possible outside of school hours. There should be no age limit; but the children should be allowed to take books home as soon as they can write their names. The children should have a certain amount of time each week in the library for study. This training should begin very early, preferably in the kindergarten, so that the child will learn the etiquette of the library, to respect the rights of readers, and to handle the books with ease and without fear. He should also be taught to handle books with care, and not to mark or tear them. The library in its turn should be careful to deface the book as little as possible with its mark of ownership; care on the part of the library will inspire care in the borrower. Many libraries use the following story on bookmarks, and it has been used as a reading lesson in the lower grades.

What a Book Said

Once on a time a Library Book was overheard talking to a little boy who had just borrowed it. The words seemed worth recording, and here they are:

"Please don't handle me with dirty hands. I should feel ashamed to be seen when the next little boy borrowed me.

"Or leave me out in the rain. Books can catch cold as well as children.

"Or make marks on me with your pen or pencil. It would spoil my looks.

"Or lean on me with your elbows when you are reading me. It hurts.

"Or open me and lay me face down on the table. You wouldn't like to be treated so.

"Or put in between my leaves a pencil or anything thicker than a single sheet of thin paper. It would strain my back.

"Whenever you are through reading me, if you are afraid of losing your place, don't turn down the corner of one of my leaves, but have a neat little Bookmark to put in where you stopped, and then close me and lay me down on my side, so that I can have a good comfortable rest.

"Remember that I want to visit a great many other little boys after you are through with me. Besides, I may meet you again some day, and you would be sorry to see me looking old, and torn, and soiled. Help me to keep fresh and clean, and I will help you to be happy."

One of the greatest problems a school has after the library has been obtained is that of organization and management. In a large city it would be found advantageous

to have one person employed whose special work should be to care for the school libraries and help the teachers in the bibliographical side of their work. It does very well to say that teachers should know the latest and best books ; but a librarian knows that it takes all of his time to keep up in a very meager way with the tremendous production of literature, and believes it is impossible for a teacher to carry it as extra work. One teacher with student assistants in every school should be assigned time for the care of the library. Such a teacher could gain enough of the principles of library economy to run a school library to advantage by attending a summer school in library economy or in the extension course offered by this Institute. Every school that trains teachers should give enough library economy to enable its students to organize and administer a school library and use libraries and books economically.

The past reading of each child should be examined on his entering school, the results recorded, and his development watched and redirected by the teacher as carefully as the child's physical conditions are cared for in the modern school. The teacher should be constantly seeking to find out what children read, what is best for them to read, and how to interest them in the best literature.

The librarian should know in advance the subjects to be studied in the school. In the outline of the work published by the superintendent of schools, at least the best pedagogical books for the teachers should be given. The librarian should look ahead and see that he will be able to fill the wants. For each subject studied a reading list should be made. The librarian may most economically and advantageously prepare such a list by collecting the material, and placing a slipat the right page when it is a part of a book. The teacher can tell at a glance whether the book is what she wants. A reading list can be made. An attractive and appropriate poster should be designed by the children of the room in which the reading list is used, to which the reading list is attached. These poster reading lists are then bulletined in the library, and if so desired a duplicate list is bulletined in the room. They can be exchanged with other schools or loaned to the public library. There should be full classified, and if possible, annotated reading lists made for Hallowe'en, Thanksgiving, Christmas, and the various holidays, lists of good books for vacation reading, and lists of books on subjects of lectures and concerts given in the town. All of these should be carefully indexed, and when they have served their immediate need, filed for use from year to year, so that the teacher's future task is merely to select and add to the lists.

At the beginning of every school year the librarian or teacher in charge of the library should take the students in groups into the library and explain the arrangement of books on the shelves, the general plan of classification, the catalog and how to use it, the rules and regulations of the library, and what he expects of the students and what they may expect of him. A course in library economy based on the one given in the July COURSE OF STUDY should be given in the Normal School, a similar course adapted to the needs given in the High School, and at least some bibliographical work in the grades.

Teachers may be of great help to one another and to the librarian by reporting any good articles or books which come out and which they know will be of value to a certain teacher or class. A small regulation signed card, giving author, title, and exact paging — if a magazine, the date and number, and the name of the person for whom it is intended—is found ad-

vantageous. These should be handed to the librarian, so that records of material can be made in the library when necessary, and then sent to their proper destination.

Nor is the teacher's duty ended when she has her school fairly well supplied with books. It is her duty to see that the child knows the library privileges of the community and has books in his home. Sometimes neither the school nor the public library is able to reach the home life. The Home Library—a case of twenty good readable books sent into the home of the child, with a friendly visitor to meet the child and ten of his friends each week—has proved successful in Boston, Pittsburg, Albany, and Chicago.

Students who are trained readers, able to choose the best written and best made books, will demand better books and better writers.

Reference Books

Koopman, *Mastery of Books*, American Book Company.

N. E. A. Library Section, Report for 1899.

Manual Training

Ira M. Carley Cora Champlin

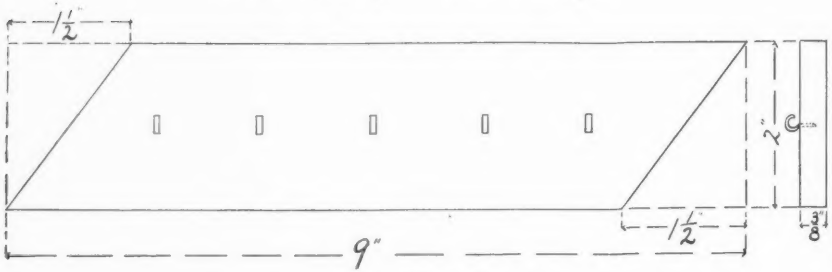


Fig. 1. KEY-RACK.

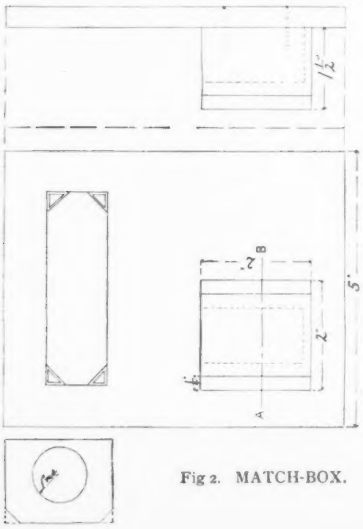


Fig 2. MATCH-BOX.

In this number are presented drawings of some of the objects to be used as suggestions for the Christmas handwork in the lower grades.

As was stated in the November number of the COURSE OF STUDY, the choice of what each pupil shall make as a Christmas gift is left, as far as is practicable, to the individual himself.

For the benefit of those pupils who have no definite preference, and for those who need help in choosing, a number of pieces of work, adapted to the ability of the children, are left for several days where they may be examined by all the pupils. In the three lowest grades, as the pupils depend

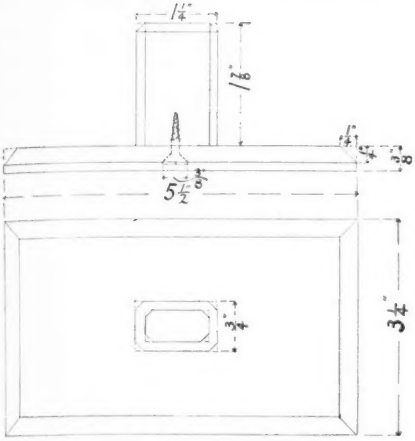


Fig. 3. BLOTTER-PAD.

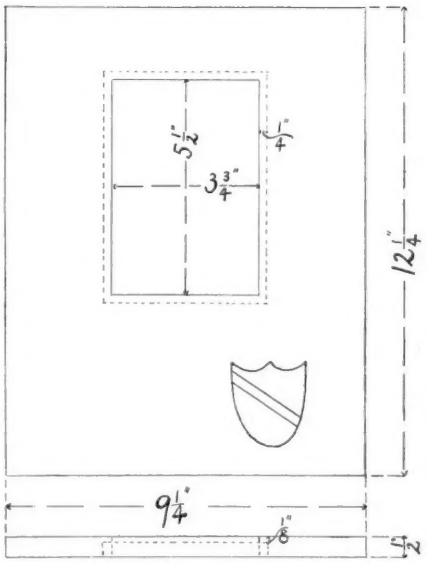


Fig. 4. PHOTOGRAPH-FRAME.

largely upon the teachers' suggestion as to what they shall do, the work is carried on in groups — each group being engaged upon a different piece of work.

In order that the pupil may have a definite plan of work in his mind, and so work independently in the manual training shop, a working drawing is prepared before he begins work on the piece itself.

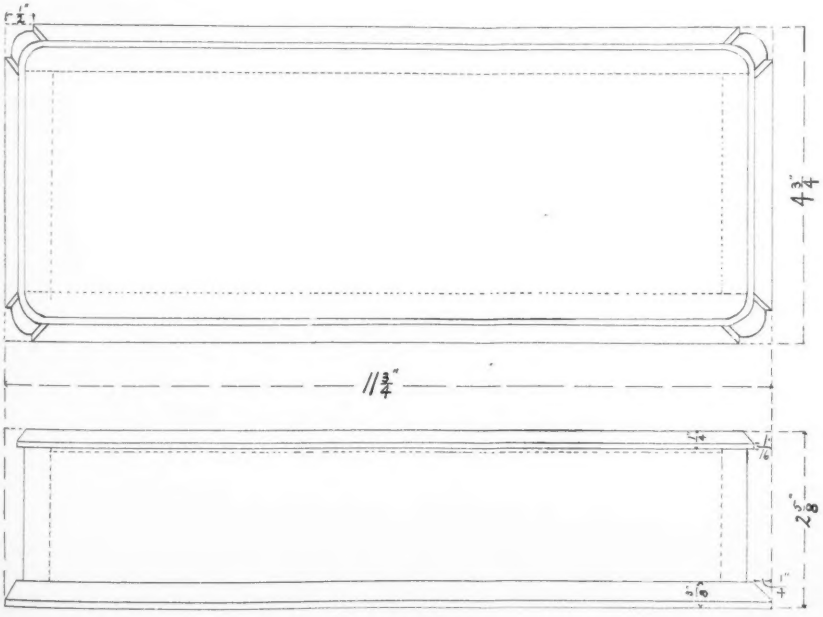


Fig. 5. GLOVE-BOX.

The drawing must give the worker all the information he will need as to dimensions, form, and construction of the object. In some cases notes upon the best method of procedure are also made, after discussion by the group.

In case the object is too large to be drawn full size on the standard drawing paper of the school, the drawing is made to a reduced scale, each pupil making his own calculations and submitting them to the teacher before laying off the lines on the drawing. All of the drawing will be done in the regular grade room and the operations of reducing to scale and the other calculations involved will form the basis for number lessons.

In the grades above the third, drawing boards, T squares and triangles will be used, and in the upper grades the best drawings will be inked and preserved as a help for future work.

Physical Training

Carl J. Kroh Caroline Crawford

Individual Gymnastics

Significance of Physical Measurements and Examinations

The physical measurements have a significance, both in regard to the symmetry and proportion of the individual, and also in regard to what is indicated by the size and development of special parts of the body. Fitness for any given work, possibility of development, also mental and nervous conditions, are marked by the peculiar development of the physique. In the following outline only some of the most prominent characteristics are noted. In a later number fuller observations will be given.

Weight: Weight and height must go together to show the condition. Any marked change in weight in a normal body is always serious.

Height: Height is the basis used for comparison in judging the size of any part of the body.

Heights.

Sitting Height: As a general law, individuals with the largest trunks are the healthiest, because of greater room for the vital organs.

Height of Knee and Length of Thigh: The thigh and the leg should bear a certain proportion to each other. The tables, quoted from the September *Physical Education Review*, giving proportions of the runner and jumper, illustrate how performance is largely based upon build.

Height of Sternum: Height of sternum gives the opportunity to find the length of the trunk without neck and head.

Girths.

The girths of the different parts of the body vary more in their relation than the heights.

Head: Of two people of the same size, the one with the larger head will have the greater amount of nervous energy.

Neck: There is a correlation between the head and the neck. A large head and a small neck are found in feeble children. A large neck, unless flat and flabby, indicates great vital power.

Chest: The chest girth is supposed to indicate vital capacity, but it may not, for a large chest girth may be due to great development of the pectoralis major, or chest muscle.

Ninth Rib: The ninth rib girth is a great factor in chest capacity because of the range of movement over this part of the chest.

Waist: The size of the waist limits the development of the trunk and strength of the back. It matters little how broad the hips are if the waist is small. It is the working base of the body.

Thigh: The thigh indicates the power of the most important muscles of the body. The large development of the leg accompanies civilization.

Knee: The joint indicates the potential strength of the leg. With a large joint there is a large attachment for the muscles.

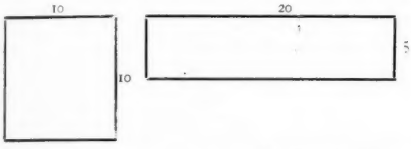
Calf: The calf is as important as the thigh. The primitive people have small calves, because neither their work nor their amusement has induced any exercise which requires the weight of the body to be lifted high on the toes, as does civilized dancing, for example.

Instep: Height of instep is associated with high breeding, because the arch is broken down with hard manual labor and heavy lifting.

Upper-Arm, Elbow, and Forearm: The arm girths are the same as the leg girths in their indication.

DEPTHS.

Depth of Chest: A deep round chest is more serviceable than one which is broad and flat. This is illustrated in the diagram:



While the perimeter of these quadrilaterals is fifty in one instance and forty in the other, the square contents are the same. Capacity of chest increases more with height than with depth.

Depth of Waist: Depth of waist and chest should be about the same. If depth of waist is greater there is generally a surplus of adipose tissue.

BREADTHS.

Head: Head breadth denotes racial characteristics.

Neck: Neck breadth with girth gives vital power.

Shoulders: Breadth of shoulders is usually an indication of strength. A person with comparatively small waist and large shoulders will have but little endurance, while a man with moderate shoulders and broad waist and hips generally has great power to endure.

Waist: The waist should compare with the shoulders.

Hips: The deep pelvis has better attachment for muscles than the broad flaring one, and the size of the hips is most important, with the increasing size of heads in this generation.

Shoulder-Elbow: This length is taken to determine one of the most important levers of the body. The principle holds with rowing as with running. A short upper-arm with a long forearm would give a quick pull and a long stroke.

Elbow-Tip: The power of the forearm is modified by the length of the lever.

Length of Foot: The foot should be correlative with height and weight.

STRENGTH TESTS.

The measurements give potential strength, but the tests show the actual strength. If there is degeneration of muscle tissue it is always shown by the actual strength, while the proportion of the muscles, owing to adipose tissue, may be apparently perfect.

The following tables, quoted from studies made at the Michigan Agricultural College, printed in the *Physical Education Review* of September, 1900, are vivid illustrations of what general measurements are proving to us:

Table I

Showing a comparison of the average track athlete with the proportions of students of the same height at Yale:

	Average.	
	Athlete.	Yale Student.
Height	69.9 in	69.8 in.
Weight	144.6 lb.	153 lb.
Sitting height	36 in.	36.9 in.
Length leg	35.9 "	35.1 "
Length to knee	19.2 "	18.2 "
Arm stretch	73.4 "	72.4 "
Breadth chest	11.2 "	11.5 "
Depth chest	7.9 "	7.7 "
Girth chest, full	38.7 "	37.6 "
Girth waist	30.5 "	30.3 "
Girth thigh, R	21.2 "	21.4 "
Girth calf, R	14 "	14.5 "
Girth instep, L	8.8 "	9.5 "

Table II

Showing a comparison of the average Michigan Agricultural College track athlete with the proportions of the human figure according to the standard of the ancient Greek art:

	Greek. Inches.	M.A.C. Inches.
Height	70	69.9
Arm stretch	70	73.4
Length of leg	35	35.9
Pubis to top of head	35	34
Pubis to knee	17.5	16.7
Knee to ground	17.5	19.2
Width of hips	13.1	13
Width of shoulders	17.5	16.7

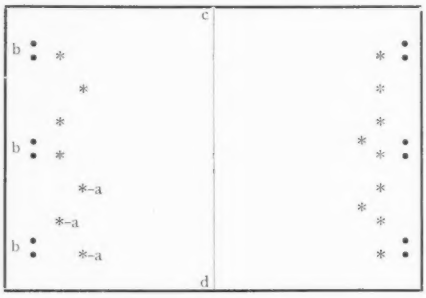
The points noted above in the comparison with Yale student are emphasized more strongly in this table; the short trunk, the short thighs, the long legs and arms are most emphatically marked. Such studies are but suggestions of what is yet to be revealed to us in working with growing children.

References: J. W. Seaver, *Anthropometry;* Nathan Oppenheim, *Development of the Child;* Julius Uffelmann, *Domestic Hygiene of the Child;* Francis Warner, *Study of Children;* Francis Warner, *Growth and Training of the Mental Faculty.* A complete list of the library references will be found in the reading list on anthropometry, heredity, and degeneracy, this month.

General Gymnastics

INDOOR GAMES

Battle Ball: The players (a a) are arranged on either side of the floor in front of three pairs of Indian clubs (b b) set up as illustrated. The



chalk-line (c-d) across the middle of the floor divides the field.

The object of the game is to throw the ball past the opposing line of players. The player may stand on any part of the field to throw, but cannot cross the middle line. The ball must be thrown low. The points are: Ball between any pair of clubs scores ten; club knocked down scores five; ball through the line between pairs of clubs scores two. Fouls: If a player crosses the middle line it scores one for the opposite side; if a ball is thrown over an opponent's head the opposing side scores one. The time limit for the game is ten or fifteen minutes. The side winning the greatest number of points in any given time, decided upon before starting to play, is the winner.

Curtain Ball: The floor is divided as for battle ball, with a curtain eight feet high drawn across the middle line (c-d). The players, any number, are scattered about on the floor. The ball is thrown over the curtain from any position and in any manner. If the ball is allowed to strike the floor it scores one point for the side throwing. The side winning the greatest number of points for any given time has the game.

Basket Ball: See Spalding's *Official Basket Ball Guide;* also *Basket Ball for Women,* A. G. Spalding, Chicago. The price of each pamphlet is 10 cents.

Dodge Ball, Pass Ball: See *One Hundred Gymnastic Games,* Geo. H. Ellis, 141 Franklin Street, Boston. $1.00.

A reading list of games will be published later in the year.

Character of the Supplementary Reading in the Primary Grades

Flora J. Cooke

The subject given above was chosen because two-thirds of the questions directed to the Primary Department during the past month have referred to supplementary reading or to the preparation of reading lessons in leaflet form.

The other questions have pertained to seat-work problems, and the answers to these will appear in the February number of the COURSE OF STUDY. The most common questions concerning the reading are: as to whether any regular readers are used in the Chicago Institute, as to the amount of time given to reading in the primary grades, and as to the best supplementary reading.

Theoretically all these questions should be treated as one, but practically it seems better to show how each in turn is met in the school-room.

Concerning the first question we need only say that the place of the so-called "regular reader" in the primary grades is taken by the blackboard and printed reading lessons which bear directly upon all the work the children are doing. At the end of the year these leaflets are classified and bound by the children into book form, and in a sense such lessons summarize the class experiences of the year.

What determines the form and content of these reading lessons was discussed in the article upon *Reading* in the October number of the COURSE OF STUDY, and each reading lesson which is printed will be accompanied by a note explaining its purpose.

We can give only a very general answer to the second question, as the amount of time given to reading depends upon the individual need of each child and the value that reading can be to him at a particular time.

Whatever the time given to this work, the teacher's first duty is to bring about the right attitude toward reading — to make reading from the first a delightful exercise. That this may be possible, not only must the children have continual opportunity to exercise their self-activities in this direction, but the images aroused by reading must always seem to them to be worth their effort.

It is most essential that reading and writing should be constant mediums of communication. For instance, the teacher writes easily upon the blackboard, answering questions, giving parts of stories and directions for work. Indeed, reading and writing are incidentally part of all the work all day long, and are always used by the teacher as direct means of image growth. The child soon desires to read for the same reason that he desires to talk —to tell something or to find out something. Even when the children have reached this stage the question of the time to be given to reading is still not limited to fixed periods upon the program.

The children who learn to read rapidly must now read much silently, and tell the class what they have found out, and the time thus gained must be given to the slower children. This plan is followed because the ordinary set reading lesson is a bore to every one; one half of the children and the teacher soon know a story by heart, and to the other half of the class the forced reading is either a torture or a dissipation of the power of attention.

The following device partially answers the third question given above. It has proved helpful to teachers having many pupils, no printing-press, and a limited supply of appropriate reading material. Two of as many second-hand readers and primary books as possible are secured; the teacher selects all the suitable reading lessons from these and pastes them upon cardboard. She classifies these into sets upon animals, plants, or as fables, myths, and facts. Each child is given a different leaflet, and by this means an audience is obtained, which is the first essential of good oral reading. Such stories should be very short at first, and the children allowed to give what they have read in a picture on the blackboard or in their own words.

This same plan is pursued where we have access to many sets of supplementary reading books. Those are selected which bear upon anything which the children are observing or enjoying, and each child goes to the book with a purpose. From this standpoint there are few books which are absolutely worthless, and as few are wholly good, a list of the books which have been found most helpful in this direction is

now being prepared for publication in the COURSE OF STUDY.

Next month we shall print one or two typical reading lessons for each month up to date. These will be numbered, and can be ordered in sets from the Chicago Institute book-room. This month is filled with the preparation for Christmas, and the reading lessons given in this number are directly correlated with the Christmas celebration.

The children tell whether they think all the children in the world have the same kind of Christmas, and their own happiness expands in their sympathetic interest in what the children of other lands are doing for Christmas. Much cannot be expected from these reading lessons in beauty and literary value. Their scope of usefulness is limited, but they must be good in influence.

In order to give our children as vivid an impression as possible of the life and customs of other children at Christmas, we necessarily used with the reading lessons pictures of the landscape and people, appropriate blackboard illustrations, and dramatic representation.

The reading lesson is placed in the child's hands only when his interest has been thoroughly aroused and he intensely desires to know what Norwegian, Italian, or French children do on Christmas eve.

NOTE: Leaflets of the following reading lessons, printed in large type, may be obtained from the Chicago Institute Book Room. Price, one-page leaflets, 9c a dozen, 1c each; two-page leaflets, 18c a dozen, 2c each.

Second Grade Reading Lesson

LITERATURE SERIES, NO. 1.

ONE STORY THE PICTURE TELLS

There is good fun in Norway at Christmas time. Even the birds have a Christ-

CHRISTMAS IN NORWAY

mas party. Björn and his father are putting up a fine sheaf of grain for them.

See Björn and Eivind with their snow shoes! Björn says: "Come and try our snow shoes. It's fine fun; they are almost as good as wings!" Eivind says: "See, we do not mind a fall. We are used to the ice and snow, and we love it."

Another Story the Picture Tells

It is very, very cold, but no one seems to mind it. To-morrow will be Christmas and every one is happy. Baby is watching the birds and crowing with delight.

I wish she would look this way. She is very pretty. She has blue eyes, rosy cheeks, and yellow hair like her brothers and sisters.

Old Granny is on the porch. She is strewing sweet pine twigs about.

She always does this at Christmas time.

That is mother with the cream for the Yule porridge.

That is little Gudrun with the large Christmas cake.

I just wish you could see the Christmas cakes in Norway. They are so pretty, and oh, how good they are!

A Story the Picture Does not Tell About Christmas Eve

In the barn is a large dish of porridge for Robin Goodfellow.

He will come and eat it to-night.

The boys believe he always comes at midnight on Christmas Eve. They would not disappoint him for anything.

There is fine Yule hay for the cows, horses, and goats.

On Christmas Eve each dog, cat, and hen must have a feast.

Shall we tell the dogs, cats, and birds in Chicago about the Norwegian Christmas?

Another Story the Picture Does not Tell

In the house all is clean from cellar to garret.

Every one has a new dress or coat.

The walls are painted with bright new pictures.

The ale is brewed, the cakes are baked.

Best of all, the Christmas tree is ready.

Björn and Eivind helped father fetch it from the pine woods. It was the finest small tree in the forest.

No picture could tell as good stories as Granny. She knows all about fairies and gnomes and goblins and giants and such things. She will surely tell stories to-night.

There will be a great fire on the hearth.

At five o'clock the big door will open.

The children will cry, "The tree! the beautiful tree!"

Every one has made a gift. There are boxes, flags, baskets, and sleds. These are under the tree; but on the tree are gilded nuts and apples, candles, gold stars, and — you may guess what.

But Christmas is only beginning in Norway; the table will be spread for thirteen days.

All the people will visit and rest and play games.

In Norway they surely have a Merry Christmas.

Stories Other Pictures Might Tell

We must look for more pictures of Norway. Some will tell of the wonderful mountains, others will tell of the beautiful blue sea and the ships. Some might show the moonlight and the stars. We should think it was night; but it might be *noon* in Norway. If Björn told you a story of the sun shining at midnight, you would say, "That is one of Granny's fairy tales!" He would think our sun acted quite as strangely.

Let us write him all about our Christmas holidays, and ask him to tell us about his.

PICTURE OF BAMBINO.

Second Grade Reading Lesson

LITERATURE SERIES, NO. 2

Christmas in Italy

Christmas in Italy is a holy day.

Every one goes to church.

The churches are beautiful with lights, pictures, and statues.

Christmas carols and hymns are sung by choirs of white-robed boys.

There is no Santa Claus and no Christmas tree in Italy.

But there are many other beautiful things to see.

People like to be in Rome on Christmas Eve.

Every one wants to see the Holy Bambino.

It is a little statue of the Christ-child.

A poor priest brought it to Rome from Palestine and gave it to the church.

It is as large as a real baby and covered with precious jewels.

You can see its picture, but you cannot see the color of the gems.

Many people bring their sick friends to the Bambino.

They think he can cure them.

Many other people want to see how this wonderful old image looks.

Would you rather be in Italy or in Norway on Christmas Eve?

Second Grade Reading Lesson

LITERATURE SERIES, NO. 3

C. N. S. Envelope, '96

Christmas in Holland

Holland is one of the strangest countries under the sun. The land is much lower than the sea, so that the people must build dikes to keep out the sea. Often on top of the dikes are houses and trees. Many of the streets are water canals and the people go about in boats. Everywhere are windmills. The houses are painted with bright colors. In winter the canals are covered with smooth ice, and the people can skate to market or to church. What good times the boys and girls have!

Christmas comes to Holland, too. The 25th of December is like our Sunday; it is a sacred day. In our country, Santa Claus comes along on that day; but St. Nicholas, the friend of the Holland children, comes on the 5th of December. On St. Nicholas eve the children are allowed to go into the grand parlor. They are dressed in their best. The mothers and girls would seem very odd to you in their caps and brightly colored dresses.

Oh, how excited they all are, even the babies! They play merry games, in which father and mother join. At last they form a ring, each one holding a little basket. They sing a low, sweet song to St. Nicholas. Soon a loud knocking is heard. Father says softly, "Come in!" The door opens; there stands St. Nicholas. He says, "Children, I greet you all!" Then he tells each one to be polite. Some should be more kind and generous. Some should work hard. He seems to know about all the things each one has done since his last visit. He tells them that in the morning they will find out that he has really been there. Then he says, "Farewell!" and throws a great shower of sugar-plums to the children. They fill their little baskets with them.

Soon they all rush to another room, where there is a table covered with a white cloth. Every one, from grandfather to baby, lays a shoe upon it. Then they go out and the door is locked.

Early next morning mother unlocks the door of the room. What a beautiful sight it is! Every shoe is filled to overflowing, and beside each shoe is another heap. There are toys and trinkets of every kind. There are toy cats that move, dogs that bark, and sheep that bleat. There are drums, trumpets, bright skates, dolls, and many books. But what is that? One of the boys finds a switch; he blushes and puts it out of the way. What do you suppose that means? I will leave you to guess.

For the rest of the day each one does as he wishes. Some read, while others play with their new toys.

Kindergarten

Anne Elizabeth Allen

"*Not what we give, but what we share.*"

Immediately after Thanksgiving our thoughts will be turned to Christmas and to finding our places in the great crowd of joy-givers. The blessedness of giving will be realized by even the smallest child when he finds himself equal to the making of the simple little objects planned for him as presents for others. These presents, however small and unpretentious, will be so designed as to come within the ability of all, and will become more complicated only when we feel certain that the skill of the children who are to make them is fully adequate to their completion. Only then will each feel that he can honestly present the gifts as his own work; only then will the Christmas spirit be genuine and satisfying in its influence.

A large tree will be decorated for the parents of the school by the kindergarten and used as one of the decorations in the Assembly Hall.

Another and smaller one will be decorated and made ready for some less fortunate people than ourselves, for which presents of toys, books, fruit, candy, and clothing will be solicited by the children themselves, committees of whom will be appointed in order to insure effective work.

The real significance of Christmas will be shown, as well as the Santa Claus spirit of jollity and fun, and its history in art, story, and music will be made prominent. Pictures celebrating the festival will be selected as decoration for the walls during the holiday season.

Subject—Christmas and its obligations.

All the things that Christmas brings, snow and ice, sleighing, bare trees, empty nests, presents, Santa Claus.

2. Our obligations; our happiness makes that of others; our part in the Christmas happiness.

Stories: Story of St. Christopher; Simple Story of the Birth of Christ; Santa Claus and his Cat; *The Night Before Christmas.*

Songs: *In Another Land and Time*, Smith's Songs, Part I; *The Story of the Christ*, Hill's Songs; *Christmas Carol*, Gaynor Songs; *A Letter to Santa Claus*, Gaynor Songs.

Rhythm: Bouncing of balls. A more marked precision in marching and simple skipping.

Games: Santa Claus and his reindeer. Snowballing.

Materials: Large blocks, clay, paints, cardboard, and zephyr. Chamois skin, colored papers, rafia or vegetable fiber.

Large blocks: Building sleighs, stables, etc. Clay modeling: Sleighs, reindeer, toys. Cardboard, zephyrs, chamois skin, colored papers, and rafia: Making Christmas presents.

St. Christopher

A long time ago in a far-off country there lived a very strong man—so strong that people called him a giant—so strong that as he walked through the woods on his travels he would pull up a small tree to use as a staff.

This giant left his home, where he did not seem to be much needed, and started out to find a great king whom he might serve.

As he traveled he searched. One told him of a king whom they thought great, but he ate too much and was a miserable glutton. The giant said, "No; my king must be a better man than this." Another told him of a king worthy to serve, but he found this king selfish and more fond of pleasure than of his people. Still another he found to be a coward who would hurt people not as strong as himself. And the giant grew discouraged; he had almost given up finding a king worthy of his service and love, when one day in going through the woods he came to a little hut where lived a hermit, a man who lived all alone and tried to serve God by prayer and fasting. To him the giant told his trouble and asked for help.

The hermit said: "I know the king whom you can love and serve and who needs you. He is the king of love and in order to serve him, his people have to cross a wide and deep river. They need a strong man to carry them across, and you could do this."

The giant thought, "What a poor way to serve a great king," and asked, "How shall I know that I am serving him?"

"When you see that dry and withered staff in your hand grow green with buds and leaves, then you will know," said the hermit.

Off went the giant, not glad, but willing to do his best, although it seemed such an easy thing to do compared to the difficult task he wanted to do. By the side of the river he built himself a hut, and there he was always ready for the people who wanted to be carried over. Men, women, and little children came, and day after day and night after night the giant carried them back and forth. He was always glad when the little children needed his help, for he loved them, and joyfully carried them up out of the way of the water and tenderly set them down on the other side.

One night as the wind was howling around his little hut and the rain was beating against it, he thought as he lay in his warm bed he heard a voice calling:

"Come! come and carry me over the water!"

It was such a bitter night that he tried to make himself believe it was just the moan of the wind he heard and not a voice calling; but soon he heard very

clearly the voice calling again: "Come! come and carry me over the water!"

This time he got up, put on his stout coat, and taking his staff in his hand went out. On the bank of the river he found a little child, very thinly dressed, asking to be carried across the deep, dark water. Taking him gently in his arms, the giant stepped with him into the river.

At first the child had seemed very light, but as he went farther he became heavier and heavier. The poor giant's back bent beneath the child's weight. Could he reach the other shore with him? He struggled on, feeling each moment that he must give up. On he went, however, until at last, worn out, he reached the shore and sank with his burden on the ground.

He saw a light, and looking up, behold! it came from the head of the child. Trembling with fear and amazement, he grasped his staff for support, and found it had blossomed into leaves and was no longer a dry stick, but fresh and green.

The little child said, "Christopher—for such your name shall be—every man, woman, and child you have carried over this river you have carried for me. I am the king you serve, and long and well have you served me."

Christopher knelt in wonder before the beautiful vision, and knew in his great joy and happiness that at last he had found the king he sought.

ANNE ELIZABETH ALLEN.

St. Christopher

So strong he was, so true and bold,
All people loved him, young and old.
Across the river, dark and wide,
He carried them from side to side—
Did Christopher, the brave.

His king he loved, his king he served
Through weather cold; nor ever swerved
From work that cost him toil and pain,
From work that showed so little gain—
This Christopher, the brave.

May little children serve this king
As Christopher did, and to him bring
Just what they have that's best and true
To give unto the king he knew—
St. Christopher, the brave.

ANNE ELIZABETH ALLEN.

First Grade

Harriet T. B. Atwood

Manual Training and Industrial Art—Christmas Work: The sloyd work and industrial art for December will consist of the making of Christmas gifts. The spirit of giving which should characterize the ideal Christmas can be entered into by the child in no other way quite so well as in the actual making of the gifts for those he loves. The powerful influence which a beautiful motive exerts is illustrated by the energy and patience with which the child strives for accuracy, neatness, and beauty in such work.

As much originality as possible will be encouraged in the making of gifts. The children will first plan the article chosen and draw a pattern of it on the blackboard. They will then criticise their own work, and after more careful measurement, will correct their drawings. The plan will then be made upon paper, and when this working plan is sufficiently accurate each child will be pro-

vided with the proper materials for carrying out his idea. The careful measurement and calculation necessary in drawing the plans and estimating the amount of the different materials required will be the number work for the month.

Suggestions for gifts, of which the children may be allowed their choice, are given below, and plans for some of these gifts will be found in the Manual Training outline.

1. Matchsafe. Material, wood and leather, with burned design for decoration.

2. Blotter. Material, blotting paper and colored silks.

3. Key rack. Material, wood and brass hooks, with burned design for decoration.

4. Stamp case. Material, cardboard, manila paper, colored silks and stamps.

5. Court-plaster case. Material, leather.

History: I. The Christmas Festival. 1. The children's experiences of our own Christmas festivities; what children like best; what they want most; how they would choose to celebrate Christmas.

2. How Christmas is observed in other lands, as Germany, Holland, England, Norway, and Italy.

3. The Christmas story. Good photographs of the most beautiful Madonna pictures will be placed in the school-room, where all may become familiar with them, and a simple version of the Christmas story will be told to the children.

II. Study of Home Activities continued: During December the children will, if possible, complete the decoration of the walls of the miniature home begun in October. (See October and November outlines.) The next step will be the selection of pictures for the walls of the different rooms. A visit will be made to the Art Institute with the view of selecting the pictures, and as far as possible tiny photographs or prints of the pictures chosen by the children will be obtained for the playhouses.

Geography: 1. A study of those landscapes which figure in the stories of Christmas in other lands by means of pictures and lantern-slides.

2. Testing of the stones collected on field trips as to hardness, strength, color, and constituents. The motive for these tests will be to discover what stones would be best to use for the stonework on the miniature houses. Classification and labeling of stones. Experiments to show the action of frost on the different stones.

Nature Study: 1. Study of Crystals. Many of the stones collected by the children contain crystals, about which numerous questions have been asked. Moreover, as the frost begins to appear on the windowpanes other questions will be suggested. During December we shall perform simple experiments in solution and crystallization with salt, alum, and sugar, which will help to answer some of the questions. In preparing for the Christmas tree the children will make rock candy. (See Miss Cooke's outline.)

2. Study of the December landscape by means of daily pictures as in previous months. The children will also begin their picture calendar, which will consist of the paintings of typical scenes of each month.

3. Observation of trees selected for study. Special study of the pine and other evergreen trees.

Correlated Number: Constant use of ruler in making. Drawing of plans for Christmas gifts and estimating the amount required of the different materials.

Reading: 1. Sentences written upon the blackboard or printed on large paper in large type. 2. Printed and written directions for making Christmas gifts. 3. Selected stories: *The Donkey and the Salt*, Æsop; *The North Wind Doth Blow*, Heart of Oak Series, No. 1. 4. Cook County Normal School reading slips: *Lesson on Stones; Christmas Stories; St. Christopher and the Christ-Child;* DecemberCOURSE OF STUDY.

Writing, Spelling, and English: Placing of new words in dictionary each week. Reproduction of the Christmas stories in writing, to be used as reading lessons. Descriptions of experiments in crystallization. Labeling of specimens.

School Economics: See Miss Cooke's outline.

Art: Study of the pictures at the Art Institute with the view of selecting some for the rooms of the playhouse. Making of designs for decoration of gifts. Illustrating Christmas stories by means of painting, modeling, paper cutting, and chalk-modeling. To help make the schoolhouse more beautiful for the Christmas entertainment the children will decorate the wall space of their room with posters illus

trating the different Christmas festivals. This will be the motive for the illustration of stories. The best of such illustrations will be reproduced and used to decorate the room.

Dramatic Art: 1. Dramatic representation of the different Christmas festivals. Training in hearing and reproducing sound. Phonic games. 2. Oral reading—poems, to be studied and memorized: The Tour of St. Nicholas; The Visit of St. Nicholas, Moore; Wintertime, Stevenson.

Music: *Christmas Song*, F. Root; *Green Holly Boughs Bring*, Eleanor Smith; *Christmas Carol*, E. Smith; *Father Christmas*, German folk-song; *Old Christmas*, E. Smith; *This is the Way the Snow Comes Down*, Gilchrist; *The North Wind Doth Blow*, Elliot; *Summer or Winter*, E. Smith; *A Sleigh Ride*, E. Smith; *Earth's Dresses*, E. Smith; *Wintertime*, E. Smith; *When the Snow is on the Ground*, Elliot. For reference to books where these songs can be found see Miss Goodrich's outline for December.

Second Grade

Antoinette Hollister

History: During the months of October and November the children discovered that two very important problems in the life of the cave man were the protection of himself and his family from the attacks of wild beasts, and the procuring of the flesh and skin of wild animals for food and clothing.

In the study of shepherd life in December the children see a change in the relations between man and animals. The cow, sheep, and dog are domesticated, and man and the animals become mutually helpful—the former as he provides for the animals food, shelter, and protection from their enemies, and the latter as they supply milk, wool, and food to man.

The children will try to discover how under these changed conditions man procured the necessities of life, and will see that the needs of the animals for whom they cared must have had an effect upon the lives of the shepherds. A change of pasture, which was a necessity for the animals, made the shepherds more or less a nomadic people. Instead of killing the animals and using their skins for clothing, these people now began to take the wool without injuring the animals, and invented the art of weaving. The children will be given wool, and will try to invent a way of making it into a fabric. Later they will study the processes of carding, spinning, and weaving, and will weave on their looms fabrics to be used for their Christmas work.

They will study the food of these people, and will serve a lunch such as the shepherds might have had. They will notice in preparing this lunch that there may be several additions to the menu which they planned when studying the food of the cave man.

The dwellings of the shepherds will be represented in clay, cast in plaster, and colored; and many of their customs will be shown on the tiles which the children are making as Christmas gifts

The child often chooses to make for his Christmas gifts articles too complicated for him to make without suggestions from people whose experience is wider than his own. Through this daily necessity in his own life for help and counsel he may be led to discover the need that there must have been among primitive peoples for a leader and that the leader must naturally have been the oldest member of the family—the father. The patriarchal form of government will be illustrated by stories. The Christmas story will be told, and it is

hoped that the work of the entire month will especially emphasize the happiness of living for others.

Literature: A story of shepherd dogs, selected from *Far from the Madding Crowd*, Thomas Hardy. Selection from *Ben Hur*, Lew Wallace. *Story of Arachne*, Baldwin's *Old Greek Stories*.

Geography: See outline for Third Grade.

Nature Study: The weather during the autumn months has been so mild that the necessity of a continuous artificial heat in the houses will probably be felt for the first time early in December. In order that they may better appreciate this necessity of their lives the children will study coal this month. Each child will be asked to describe the heating apparatus in use in his own home. Each will bring to school samples of the kinds of coal used in furnaces, stoves, or grates. The specimens will be classified as to color and hardness, and the children will go to a coal-yard in order to ascertain the price of each variety.

Children will be asked to explain why so many kinds of coal are used, and the following experiment will be performed to help them to discover how each variety is adapted to the purpose for which it is used:

The bowls of three ordinary clay pipes will be almost filled with cannel, anthracite, and bituminous coal, respectively. They will then be sealed with plaster of paris and placed over gas-flames. The gas which comes through the stems will be lighted, and the other products which come through the stems caught in water.

Children will record in writing, or with paints, all that they may observe in this experiment. They will also burn the coal in open pans to find out which kind lights most easily, which burns longest, and which burns with the greatest amount of flame.

Number: The children will compare the prices of the various kinds of coal, and will ascertain exactly how much more expensive one variety is than another.

Their work in weaving and in sloyd will necessitate simple addition, multiplication, and division. For additional work in number, see outline for Third Grade.

Reading: During the library periods of this month the children will read stories of shepherd life and Christmas stories to be told at the lunch-table to other children and to guests.

Whenever possible, directions for work will be printed on large paper with rubber type.

Writing and Spelling: Many of the children of this grade write with a cramped position of the hand and of the body. Exercises will therefore be given to correct these habits and to cultivate freedom of movement.

The pupils will be encouraged to write for the benefit of other classes some of the best stories told at the table, and will keep copies in order that they may be used on similar occasions in the future. The spelling must be correct, and the writing the best that the children can do.

School Economics: See Miss Cooke's outline.

Art: The Second Grade children have been especially interested in coloring their plaster illustrations of the life of cave men. They have asked to make more of these, and will be allowed to illustrate shepherd life in the same way. They wish to use these as Christmas gifts.

Music: *In Another Land and Time*, Smith; *Old Christmas*, *Christmas Time*, *Christmas Carol*, *Father Christmas*, *Earth's Dresses*, *Sleighing Song*, all in Modern Music Series, Primer; *Winter Time*, Modern Music Series, Number One; *This Is the Way the Snow Comes Down*, Children's Songs and How to Sing Them, by Wm. L. Tomlins.

Manual Training: The work of this month will be entirely Christmas work. Children will select from the list furnished by the Manual Training department articles which they wish to make. See Manual Training Outline.

Industrial Art: Material will be woven for button-bags and more towels will be hemmed for use in the school-room.

Dramatic Art: See outline for Third Grade.

Third Grade

Gertrude Van Hoesen

If the growing interests of the children are to form the basis of the work, it is generally necessary to modify and often to change the plan altogether. It is my purpose in the Third Grade outlines to show how the plan has been changed or modified each month in order to follow the initiative of the children.

Nature Study: In October in preparing food for winter the children dried some of the fruits, this process being the only one that they had never seen. They discovered that different fruits contained different amounts of water. The question was asked, "What else is in fruit besides water?" In order to answer the question it became necessary to begin a line of work not planned in the November outline. The data which the children get in this work will be printed in the first outline following the time at which they answer their question.

At first each child brought the fruit that he wished to dry. It resolved itself into an experiment with only apples and bananas. Then they tested other fruits. The first experiment was as follows: Three children weighed out 30 grams each of the same apple. Then it was carefully dried, and two of the results agreed: 4.8 grains of solid matter left, or about 1-6 of the apple weighed out. As one gram of water equals one cubic centimeter, by measuring out 25 c. c. of water and reweighing 30 grams of fresh apple it was possible for the children to see the relation of the constituents to each other. Then the question, "What else is in the fruit?" was asked. The November work consisted of answering that question.

1. The fruits were tested for starch—making the test with both fresh and dried fruit. The presence of starch is shown if the substance turns blue when a drop of a weak solution of iodine falls on it.

2. They were tested for carbon. The test for carbon is burning.

3. Ten grains of the dried substance was burned until all of the carbon disappeared and only ash was left. What part of the dried fruit was ash? What part of the fresh fruit is ash?

4. Then the ash was tested for lime and salt. The presence of lime is shown by effervescence when a portion of the ash is dropped into a test tube containing HCl, or H_2SO_4 concentrated.

The test for salt is $AgNO_3$. If salt is present in a solution, a drop of $AgNO_3$ produces a cloudy effect.

The study of the fruits and some vegetables during November consisted of experiments necessary to determine the following points:

1. What part of each fruit is water? What part of each fruit is solid matter?
2. Test for starch.
3. Test for carbon.
4. What part of each fruit is ash?
5. Tests for lime, salt, and possibly potash.

In December the articles of food which are found on our daily menus will be tested for:

1. Starch. 2. Carbon. 3. Albumen and gluten. 4. Sugar. 5. Fat.

1. Test for starch — iodine.
2. Test for carbon — burning.
3. Test for albumen — heat, illustrated with

the white of an egg and the juice of meat. Test for gluten — wash all the starch from wheat flour, gluten remains.

4. Test for fat — grease.

5. Test for sugar — taste.

This examination of foods will extend through January, as it is one of the subjects in which the children show keen interest, each child performing each experiment individually.

The observation and record of the landscape will be continued. The children will be encouraged to visit the animals of Lincoln Park, noting especially the covering of the different animals and their habits of eating. The books about animals in the library will be placed where the children may use them freely.

Geography: In the study of roads in October, an asphalt pavement was laid in front of the school-building, and was therefore the first road considered. The process was carefully observed, and recorded from beginning to end. The question, "What kind of stone are the men using?" took us into an investigation of stones. The great interest which these experiments aroused, augmented by the number of new buildings in process of erection in the neighborhood, made it seem wiser to follow the pupil's interests in that direction, and continue through November the study of roads. The November work was carried on as follows:

1. A small sample of stone used in laying the road was dropped into a test tube containing concentrated acid. Effervescence immediately followed, and soon the bit of stone was entirely dissolved.

2. Bits of marble were dropped into a second tube containing acid, and a more violent effervescence and a more speedy dissolution followed.

3. Small shells were placed in a third tube with acid, and almost instantly disappeared.

The conclusion was that the three contained the same substance, to which the name lime was given.

Samples of all the stones being used in the neighborhood and stones collected at the Sand Dunes were brought in and tested.

The first classification was: 1. Stones that contain lime. 2. Stones that do not. Experiments were made to find out what the stones were that did not contain lime. Sandstone was discovered by putting several small pieces in a jar of water and shaking it vigorously. A piece was also examined under the microscope. The stories of the formation of sandstone and limestone were told.

The use of different stones.

Test for strength, hardness, and durability. In testing for the last named quality, pieces of various stones were soaked in water for several days. How would the tendency of a stone to absorb water affect the desirability of using it?

Effect of taking a high polish?

Another classification was soon made:

1. Stones which apparently consist of one constituent.

2. Those which contain more than one.

Effect of heat on these two classes. How does the fact that certain stones are more desirable than others affect them in the buildings around us?

The children were taken to a place where the underlying rock in the region crops out. Test: Compare the expense of obtaining the best stone and the limestone which is so plentiful.

During the month, study of road-making was continued.

The study of the water supply as planned for November will be taken up in December.

History: As the Third Grade children have never had the study of primitive peoples, it was thought best to let them do that work with the Second Grade. See Miss Hollister's outline.

Literature: As the December thought is distinctly the Christmas spirit, the literature is directly connected with the History. See Miss Hollister's outline.

The story of Ulysses is continued to his arrival in the land of the Phæacians. Stories of the celebration of Christmas in other lands.

Number: Computation of the cost of the Christmas presents. Numbers necessary in making the plans or working drawings for each Christmas present. Comparison of the meteorological records for November with October.

Writing and Spelling: Complete records of all experiments made in Nature Study and Geography. Descriptions of the landscape under different meteorological conditions.

Original stories and dramatization of stories told.

Dramatic Art: Dramatic presentation of the celebration of Christmas in other lands. Training in hearing and reproducing English vowel sounds continued. Poem to be studied and memorized: *The Night before Christmas.*

Music: The same as the Second Grade.

School Economics: Special point: Care of room.

Cooking: See Miss Cooke's outline.

Art: Illustrations of the stories in History and Literature with clay, painting, blackboard, and charcoal illustrations. Painting of the landscape. Modeling in clay of animals specially studied in park.

Industrial Art: The Christmas presents include two articles requiring both plain and fancy sewing: a laundry bag for handkerchiefs and a button bag.

Manual Training: The manual training for December consists entirely of work on Christmas presents. The children are to be given a choice of two articles, (1) a blotter pad and (2) a matchsafe. For plans of the above articles see the Manual Training outline.

French: The French will be directly correlated with the Nature Study and the making of Christmas presents.

Physical Training: Continuation of November work.

Fourth Grade

Clara Isabel Mitchell

Christmas, its celebration and present-making, will doubtless form the chief interest of the children this month. The celebration will be an elaborated morning exercise, in which all grades of the school participate, prepared for each of the many for the entertainment of all. Parents will be specially invited to be present and receive the gifts prepared for them. The entire program is planned to grow out of the regular work of the school: the literary part will be prepared as lessons in literature and dramatic art; the songs will be learned in the hours for music; the gifts will be made in the time devoted to manual training and art, special afternoon hours being arranged for additional time.

Literature, Oral Reading, and Dramatic Art: The children will read and reread the Bible story of the Star of Bethlehem, the Shepherds, the Wise Men and the Child in the Manger. The portion of Ben Hur which describes the journey of the three kings will be told or read by teacher and children together. Prints and photographs of the great pictures illustrating the Nativity will be shown, and hung in the school-room. The special contribution made by the Fourth Grade class to the general entertainment will be adaptations and arrangements of the Christmas story where it fits into the thought of the program of the whole. Christmas stories and poems will be read, told, dramatized, and read orally, for the reinforcement they may give to beautiful Christmas sentiment and action. The poems selected are: *A Song of St. Francis*, by Henry Neville Vaughan; *Santa Claus*, anonymous, and *The Little Christmas Tree*, Susan Coolidge.

As continuation of the sociological excursions and observations of the previous month, the children will read and hear stories of the Christmas customs of the foreign people of the city, either here or at home: Italian, German, Scandinavian, Dutch, English, and Russian.

Music: After the children have become deeply interested in the idea of Christmas they will be encouraged to make a Christmas song for their parents or friends, or imaginary people, as an expression of their feeling for the season. If different children

venture to make suggestion of ideas for the song, these ideas will be discussed and the most fitting put into simple verse as text. Volunteers will be encouraged in setting this original text to music. When the music and verse shall have been discussed and decided upon, the entire class will memorize it and learn to write it.

The rote songs chosen as beautiful and best suited to the season are: *We Three Kings of Orient; Christmas Carol*, by Eleanor Smith Modern Music Series; *Green Holly Boughs*, E. Smith; *First Nowel*, Old English carol, December COURSE OF STUDY; *Christmas Bells*, Niels Gade (text by Hans Christian Andersen) December COURSE OF STUDY; *Christmas Bells*, (text by Longfellow), Modern Music Series Second Book, Eleanor Smith; *Ye Shepherds, Arise*, Reinecke, Fifty Children's Songs; *St. Christopher*, Mrs. Crosby Adams, December COURSE OF STUDY; *God Rest You, Merry Gentlemen*, December COURSE OF STUDY; *Old Christmas*, Modern Music Series, Second Book, Eleanor Smith; *Winter Song*, Modern Music Series, First Book, Eleanor Smith.

Manual Training and Industrial Arts: Besides making the metal trays, simple books, and baskets indicated in the November Outline, the children will make wooden shoe-boxes of poplar wood, staining them with aniline colors and outlining simple original designs with pyrography. They will also make button-bags of silk, ornamented with beads; stick-pin holders woven of silk in simple design; sofa-pillow covers and small table covers of colored linens ornamented with applique.

History: Continuing the study of Chicago begun in October, the history will be studied as offering possible explanations of the questions asked during the past two months as to causes of the great present population. The geography excursions and discussions of the previous months having given a setting, the children will be prepared to image the early conditions of Chicago.

The history study will begin by the reading of a brief description of Quebec, Lake Champlain, the St. Lawrence, Lake Huron, and the settlements of these regions.

The following points will be taken as of importance in the settlement of Chicago: Discovery of the Mississippi; discovery of the Chicago portage; journey of Joliet and Marquette; life, work, and death of Marquette; career of La Salle; life and characteristics of the Iroquois, Sioux, and Illinois Indians. These early events will be pictured by the children in writing, drawing, and painting. Special books for the keeping of this story will be made, illustrated, and written by the children as the lessons are given.

Geography: The Chicago River will be visited once more; its use, past and present, will be discussed; and its appearance, cause and source of mud, and deposition of sediment.

From this study of the Chicago River the children will think about the subject of rivers in general, and they will be taught the reason for different kinds of river valleys, cañons, falls, wide valleys, and the flood plain. They will make in the laboratory illustrations of the different kinds of river valleys, and will also make river basins, showing relation of tributaries to major stream, and relation of a river, in a general way, to the industrial life of a region.

Number: In connection with the buying of materials for Christmas presents the children will be taught correct and simple methods of keeping accounts. The work of previous months will have given intelligent understanding of the use of percentage and decimal forms, and these will be applied to United States money.

Nature Study: The methods employed by different forms of animal life for protection against the cold of winter will be the subject for science lessons. The domestic

animals and those of the zoölogical gardens will be observed and discussed.

The use of wood, coal, and gas as fuel will be studied in the burning of a candle as an illustration of combustion.

Cooking and Domestic Science: Owing to delay in securing suitable room and equipment for teaching this subject, the October work was not taught as outlined, but was given in November instead. Following that plan, the October work in cooking will be the study of sugar in the making of candy: burned sugar, caramel, syrup, and recrystallized sugar. Connecting with the science lessons already outlined, the large percentage of carbon in sugar will be discovered as a product of combustion. As stated in the outlines of previous months, the foods successfully cooked will be served at the daily luncheon hour, which is an occasion for mutual entertainment, attention, and courtesy, as well as refreshment.

References

EARLY HISTORY OF CHICAGO.

Andreas, *History of Chicago*, Vol. I, II, and III; Blanchard, *The Northwest and Chicago*, Vols. I and II; Kinzie, *Wau-Bun*, edition of 1873; Moses, *Illinois, Historical and Statistical*, Vols. I and II; *The Fergus Papers*.

RIVERS.

Geikie, *Physical Geography;* Réclus, *The Earth;* Herrick, *The Earth in Past Ages;* Brun, *Geology;* Le Conte, *Compend of Geology;* Encyclopedia Britannica; Macturk, *Physical Geography;* Huxley, *Physiography;* Russel, *Rivers of North America;* Chisholm and Lute, Longman's *School Geography;* Slater, *First Book in Geology;* Tarr, *Physical Geography;* Abbott, *Water and Land*.

Fifth Grade

Willard Streeter Bass

History

The subject for the month will be the settlement and early history of Virginia. The study of the social and industrial life of the colony will be a very prominent feature of the work. The influences which determined the peculiarities of Virginian life sought in (1) the character of the colonists and their motives in coming to America and (2) in the geographic character of the colony. The work will begin with a comparison of life on a Virginia plantation with that on the New England farm studied in November, and comparisons with the conditions previously studied in New England will be made at every step in the work, in order that the effect of geographic and climatic influences upon social, industrial, and civil institutions may be more clearly seen. The topics to be treated, with some hints of the methods to be employed are given below.

THE VIRGINIA PLANTATION. The teacher will show pictures of Virginia plantations of colonial times. The pupils will observe the character of the land, the size of the fields, the house, the slave quarters, etc. The chief business of the plantation will then be discussed, and the methods of tobacco culture and their influence upon the life of the planter determined. The plantation will be compared with the New England farm studied in the November history, and with the Illinois farm visited in October. The life of the planter's children will be studied as a means of making vivid to the pupil's mind the leisurely outdoor life, with its abundance of sports, and its scarcity of books and studies, its lack of towns and schools.

GEOGRAPHICAL CONDITIONS WHICH MADE THIS LIFE POSSIBLE. The children will see from pictures that the soil is fertile and the climate favorable for tobacco culture. From sand or chalk modeled maps they will see the abundance of rivers, and how it would be possible for each planter to have his own wharf and sell his tobacco and buy his manufactured articles from the master of some ship at his own door.

CHARACTER OF THE COLONISTS AND THEIR MOTIVES IN COMING TO AMERICA. The lack in Virginia of the intense religious feeling which characterized the New England Puritans will be at once apparent to the pupils, and they will be led to seek its cause in the more commercial motives which were responsible for the colonization of Virginia. Among these will be noticed the desire of England to rival Spain in obtaining wealth from the New World, and the incentives as well as possibilities of colonization growing from the destruction of Spain's sea power.

STORY OF JOHN SMITH AND THE FOUNDING OF VIRGINIA. Tell or read the story of Smith's early life as that of a great adventurer in an age of adventurers. Let children give Smith's probable motives in coming to Virginia. Describe the first years at Jamestown, what Smith did for the colony, his explorations, and his adventures with the Indians. Make the descriptions so vivid that the pupils can draw a picture of Jamestown and of the more dramatic of Smith's adventures.

References: Fiske, *Old Virginia and Her Neighbors*, Vol. II, pp. 174-269; Doyle, *English Colonies in America*, Vol. I, p. 185; Lodge, *English Colonies in America*, pp. 1-92; John Smith, *The True Relation* (American History Leaflets, No. 27); Earle, *Home Life in Colonial Days*. For children: Charles Carleton Coffin, *Old Times in the Colonies;* Guerber, *Story of the Thirteen Colonies;* Carpenter's Geographical Readers, *North America*, p. 104.

Geography

The work of the month will be the beginning of the study of North America as a continent. The particular object of the month's work will be to have the pupil form a clear image of North America as a huge land mass composed of widely varying landscapes and supporting many forms of life and activity. Maps will be used this month as a means of helping the pupil to form a clear perception of the landscape of a region and its relation to other regions.

The class will first consider the landscape about Chicago and discuss it in respect to (1) surface, i.e., level or undulating, (2) soil, (3) vegetation, (4) occupations of inhabitants, (5) agricultural products.

The landscape in other sections of the continent will be studied in the same particulars as that about Chicago. The means of study will be twofold. (1) Those of the pupils who have traveled will describe the regions they have visited to the rest of the class, and draw pictures on the board showing the landscape, occupations of the people, etc. (2) Pictures of characteristic landscapes and industries will be exhibited and descriptions of them read. The localities so studied will be New England, whose history was studied in October and November; Virginia, whose history is being studied in December; the cotton belt, the great plains, the Rocky Mountains, and the Pacific slope.

The class will locate each of the regions studied by pointing to the direction in which it lies from Chicago, and telling the length of time required to reach it by railroad. The Atlantic and Pacific oceans and the Gulf of Mexico will be located in the same manner, and the distance to the Arctic Ocean estimated by the time which would be required to reach it, if the conditions of travel to it were the same as to the other seacoasts.

The teacher will then clarify the crude picture of the continent thus formed, by modeling it in sand before the class. He will begin by locating Chicago, and, seeking directions from the class at every point, will locate and represent each region studied. The result of his work should further show the general triangular shape of the continent, the largest indentations of the coastline, the division of the land into two great slopes, and the positions of the largest river basins. The class will describe the shape of the continent and the position of the two great slopes by gesture and then model it in sand. As the pupils feel the need of more detailed

knowledge for the sake of greater accuracy in their maps, the teacher will model a map in chalk.

The class will then study, by means of pictures, descriptions, and United States crop bulletins, the probable climatic conditions and occupations of the people in various parts of the continent as they exist in December. The types taken for study will be the Eskimo and the Klondike miner in the extreme north, the lumberman in Canada and northern United States, the cotton grower in southern United States, the cowboy on the plains, the fruit grower in California, and the cacao planter in Mexico. Each pupil will take one of these men and find out all he can of his daily life and his surroundings. He will then report what he learns to the rest of the class in writing, by a picture, and if possible by actually acting out some portion of the life studied.

References for Pupils: Carpenter, *Geographical Readers, North America*, pp. 109–118, 184–189, 264–274, 298–306; King, *Picturesque Geographical Readers, Fifth Book*, pp. 1–13, 78–106, 206–216; Ibid, *Second Book*, pp. 1–13, 165–169, 273–276; Wyckoff, *The Workers*, Vol. I.; Tarr and McMurry, *North America*; United States Crop Bulletins; Longman, *Geography*,

Nature Study

METEOROLOGY: The weather record, by means of the color chart and graphical thermometer record, will be continued. The principle of the barometer will be explained. Each child will learn to read the instrument and will keep a graphical record of its rise and fall during the month. The conditions of the weather following a rise or fall of the barometer will be carefully noted and an estimate formed of the usefulness of the instrument in directly predicting the weather.

ASTRONOMY: The inclination of the sun will be observed with the skiameter at nearly the time of the winter solstice. The area of level ground covered by a given cross-section of sunshine will be determined and compared to the area of level ground covered by an equal cross-section November 22. In connection with this a comparison of the average temperature of November and December will be made.

PHYSICS: Simple experiments upon air pressure will be performed by the pupils, which will lead up to an understanding of the principle of the barometer. Care in observing and recording experiments will be required of the pupils, and the necessity of drawing one's own inferences from experiments insisted upon.

Simple experiments will also be performed to show the conveyance of heat by conduction and convection, and to show the expansion of solid, liquid, and gaseous bodies when heated. Practical applications of the principles learned in the above experiments will be seen in a study of the heating and ventilating apparatus of the building.

References: Jackman, *Nature Study and Related Subjects*, pp. 64–67; Jackman, *Nature Study in the Grammar Grades*, pp. 107–113, 136–144, 153, 154; Hall and Bergen, *Text-Book of Physics*, pp. 28–40, 223–227, 342–344, 346, 349, 350; Carhart and Chute, *Elements of Physics*, 83–102, 104–108, 128–137, 140–142.

Number Work: Problems of the same nature as those described in last month's outline will arise also from this month's weather record and skiameter observations. These problems will be treated in the same manner and will give the pupils practice in the use of fractions and in percentage as a means of expressing a ratio.

In connection with the study of the heating apparatus of the building, the amount of coal burned in a day, a week, and a month will be ascertained, and from this, and the price of coal, the cost of heating the building will be determined.

Written Work: History. The class will write an original story of the life of a Virginia boy, modeled after the story of Ezekiel Fuller in *Ten Boys*, and intended to supply in some measure the lack of such a story in that book.

Geography. Each pupil will write a story of a December day in the life of an inhabitant of some portion of North America.

Nature Study. Written records of all experiments in science will be kept, and care will be taken to have these clearly expressed and correctly written.

Art: Painting of December landscape and of scene from Virginian life.

Drawing: Apparatus used in experiments in physics. Diagram showing area of level ground covered by a beam of sunshine of given cross-section at noon on December 22.

Sand Modeling: Map of North America.

Music: *Christmas Bells*, p. 92; *Old Christmas*, p. 100, in Second Book Modern Music Series; *We Three Kings of Orient Are: Christmas Carol*, p. 128 First Book Modern Music Series; *Zu Bethlehem Geboren*, December COURSE OF STUDY; *In the Tempest*, p. 182 Third Book Modern Music Series; *Father Christmas*, p. 57 Primer, Modern Music Series.

Sixth Grade

Edith Burnham Foster

History

I. The sea route to India. 1. Vasco da Gama (1498). (a) Found favor with the Hindu Rajah of Calicut on Malabar coast, and took back a letter from him to the King of Portugal. (Text of letter to be read. Quoted in *Hunter*, p. 418.) (b) Subsequent voyages and settlements of da Gama.

II. State of India at that time. (a.) In hands of Hindus. (b.) Who were the Hindus?

III. History of conquerors of India.

1. Aryans conquered aborigines. (a) Traces of aborigines now in scattered tribes. (b) Our knowledge of early history unreliable. Ramayana; Mahabaratha.

2. Hindus: (a) Brahminism: Caste. (b) Buddhism.

3. Mahommedan invasions.

4. The Moguls.

IV. The Moguls.

1. Babei.

2. Akbar. (a) Founding of empire. Tolerance in religion. Conciliation of Hindus. (b) Shah Jahan. Golden age of Mogul rule. Buildings. (c) Jahangir. Roe's embassy. (Quote Jahangir's letters to King James of England. In *Embassy of Sir T. Roe.*) European knowledge of India corrected and enlarged.

V. What the Moguls did for India.

1. In government. Made a firm empire. (a) By reforming the taxes. (b) By conciliating the Hindus.

2. In architecture. (a) Delhi. (b) Agra. (c) Fort at Agra, as typical of Akbar. (d) Pearl mosque and Taj Mahal as typical of Shah Jahan.

VI. The Moguls as tomb-builders. Their idea of a tomb and of death as compared with that of the Egyptians, as illustrated by the Taj Mahal and the Pyramid of Cheops.

1. Taj Mahal.

[Some time will here be spent in studying Mogul architecture, and comparing its forms and decorations with those of other architectures with which the children are familiar. The children will be helped to

see how the style was the outgrowth of racial ideas and tastes, adapted to local conditions. Many pictures, of course, will be used, and the children will draw ground plans of some of the famous buildings.]

VII. India after the Moguls. This period, embracing the rise of the Mahratta power, the origin and development of the East India Company, and finally British rule in India, although of vast importance, will be somewhat rapidly passed over, the Moguls and their art being the principal subject for the month. The home life of different classes of the Indian peoples to-day will, however, be dwelt on at considerable length. Their religion, their education, their arts and manufactures will be gone into, and the ways in which these influences affect the daily living of the people will be shown.

References: Marshman, *History of India;* Dow, *History of Hindustan;* Fergusson, *History of Indian and Eastern Architecture;* Braddon, *Life in India;* Foster, *The Embassy of Sir T. Roe to India* (publication of the Hakluyt Society); Hunter, *The Indian Empire.*

Nature Study

The subjects for the month are HEAT and FUEL.

The children will first organize their present knowledge by answering certain questions, such as: With what modes of heating are you familiar? Describe the apparatus necessary in each case. On what principles does each mode depend? What are the advantages of each mode? Disadvantages?

I. Open Fires.

1. With coal. (a) Hard. (b) Soft.
2. With wood.
3. Grates, movable and fixed.
4. Andirons.
5. Shape of walls of fireplace.
6. Relative size of fireplace and flue.
7. Ash-chutes.
8. Advantages: Beauty; simplicity; good ventilation afforded.
9. Disadvantages: Expense; constant attention necessary; small radiating power.

II. Stoves.

1. Stove structure; fire-box; pipe; dampers; ash-box.
2. Fire building: material; draughts.
3. Principles: (a) Convection. (b) Conduction. (c) Radiation.

III. Furnace.

1. Hot-air. (a) Construction; compare with stove.
2. Hot-water. (a) Construction of apparatus; compare with kitchen boiler. (b) Convection of water. (c) Insulation of pipes. (d) Relative conductivity and radiating power of material.
3. Steam. (a) Construction of apparatus. (b) Latent heat of steam.

IV. Fuels.

1. Coal; where found; composition. (a) Anthracite. (b) Bituminous. (c) Countries and sections of countries where this is the chief fuel. (d) Cost, actual and relative.
2. Wood. (a) Disadvantages. (b) Where most used. (c) Cost.
4. Gas, natural and manufactured.

References: Encyclopedia Britannica: Articles on *Conduction, Convection, Radiation;* Ganot's *Physics;* Jackman's *Nature Study for the Grammar Grades.*

Geography

I. The relation of India to the rest of Eurasia.

1. Peninsular form.
2. Mountains to the north. (a) Their influence on climate. (b) Strong barriers between India and Central Asia.
3. Seas to south, east, and west. (a) Their influence on climate. (b) Europeans first directly approached India by sea.

II. The great natural features.

1. Mountains. (a) Himalayas, highest in the world. Few passes. Drainage from both north and south slopes comes into India. (b) Vindhyas. Barrier between north (Hindostan) and south (the Deccan). (c) Western Ghats. Their unbroken wall to the south makes bold and beautiful coast scenery and determines direction of drainage to the east. Influence on rainfall. (d) Eastern Ghats. Pierced by rivers from the west. Influence on rainfall.
2. The mountains and monsoons as determining climate.

III. The rivers.

1. Indus. (a) Route of commerce. (b) Pathway for invaders.

2. Sutlej.

3. Brahmaputra.

4. Ganges. (a) Its sacred character. (b) Importance to India.

5. The rivers of the Deccan. (a) Narbada. (b) Tapti. (c) Godavari. (d) Kistna. (e) Kaveri.

IV. The plains.

1. Indo-Gangetic plain. (a) Extent. (b) Fertility (two and three harvests a year). (c) Products: Pease, pulses, oil-seeds, poppy-plants, jute, rice, tea. (d) Density of population.

2. High plain of the Deccan. (a) Wonderful black soil. (b) Mineral wealth. (c) Coal.

V. Great Fertility of Indo-Gangetic plain and its sheltered situation as fitting it to be the cradle of a race.

VI. Physical geography and political destiny of two sides of the peninsula as determined by the characteristics of the mountain ranges on either coast.

1. On east country comparatively open and everywhere accessible to the spread of civilization. Here ancient dynasties fixed their capitals.

2. On the other hand, people of the western coast have bountiful rainfall, caused by the monsoon and the Western Ghats, while central and eastern portions are comparatively dry.

VII. Scenery of India. Varied character.

1. Highest mountains in the world.

2. Great plains and deltas.

3. Vast forests impenetrable to man.

References

Same as for history, with exception of Braddon, Forster, and Fergusson. An excellent article, condensed from Hunter, is to be found in the *Encyclopedia Britannica* under the head of *India*.

Number Work: Compare length, breadth, area, and population of India with those of China and of the United States by fractions and percentage. From United States Census Reports estimate density of population in New York, Illinois, Nebraska, Montana, and compare with that of Chinese and of Indian river plains. Compare area and population of all Europe with that of India. Compare revenue of India under Jahangir and under British government to-day, and compare purchasing power of the two sums. Compare cost of living in India with cost in United States and in China. Compare area of Indian and Chinese river plains and annual production of each.

Making: Making of Christmas presents. Making of transparencies.

Modeling: Modeling of tiles in low relief representing Indian costumes and customs.

Painting: Landscape calendar. Sketch of child in Indian costume. Sketches of Indian objects of art. (After visiting the Nickerson collection at Art Institute.)

Drawing: Drawing of ground plan of Taj Mahal. Sketch of elevation of Taj Mahal. Making of Indian geometrical designs.

Music: *Christmas Bells*, Niels Gade, text by Hans Christian Andersen, December COURSE OF STUDY; *Christmas Bells* (text by Longfellow), Modern Music Series, Second Book, Eleanor Smith; *Ye Shepherds, Arise*, Reinecke, 50 Children's Songs; *St. Christopher*, Mrs. Crosby Adams, December COURSE OF STUDY; *Old Christmas*, Modern Music Series, Second Book, Eleanor Smith; *The Christmas Tree*, Edward Grieg (Augener and Co. Edition); *Winter Song*, Modern Music Series, First Book, Eleanor Smith.

Dramatic Reading: *The Demon of the Matted Hair* (adapted from Hindu myth). Other adaptations from the *Ramagana* and *Mahabaratha*. *The Pipes of Lucknow*. Reading and dramatization of scenes from *The Jungle Books*, Kipling; *The Last Suttee*. Training in hearing and producing English vowel sounds.

Seventh Grade

Katharine Stilwell

Roman History

METHOD:

Pupils will state the political and economic conditions in Rome at this time. They are to infer these conditions from their study in November. They will then put themselves in Rome, and reason out the best method of improving these conditions. They will read the story of the Gracchi and their mother Cornelia. They

will also read the stories of Marius and Sulla, comparing these efforts at reform with the plans they themselves have suggested.

Cicero's life will be taken up first as the typical life of a Roman boy. His childhood and boyhood will be presented to the class through pictures of his dress, home, the furniture of the house, the school, his occupations, etc. His first appearance at the Forum will be illustrated in costume, and his preparation for public life described by the teacher.

His power as an orator will be felt through the study of a selection from one of his orations on the Catilinian conspiracy. His idea of government will be discussed, and the pupils will themselves try to fit it to the existing conditions, and in this way discover for themselves the cause of his failure.

They will, by reading, learn all they can about Cæsar. They will then compare him as a public officer, as a general, as a writer, and as a dictator. In studying his duties as a public officer, they will learn about the public games of the Romans. In following his career as a general, they will trace his campaigns, noting their relation to the geography of the region. Selections will be read from the Gallic war.

The pupils will then discuss the character of the man, and compare the historical Cæsar with Shakespeare's Cæsar.

They will learn the condition of Rome in the time of Augustus by spending a day with the poet Horace. (See *The City of the Seven Hills.*) They will visit the Art Institute, and study pictures of the roads, temples, and statues of this period. The period after Augustus will be briefly described by the teacher.

From their own experiences, from reading, from the picture collection of the school, from stereopticon views of Pompeii, from the pictures and statues seen at the Art Institute, and from objects at the Field Columbian Museum, the pupils will discuss what is in the world to-day of Roman art, language, literature, and law.

I. The Revolution.

1. Political and Economic Conditions.

2. Agrarian Reforms. The Gracchi. Senate vs. Assembly.

3. Jugurthan war. Marius. Democratic ascendency.

4. The Social war. Its results.

5. Senatorial ascendency. Cost of Sulla's conquest. Object and result of his constitutional legislation. Its overthrow.

6. Political power in the hands of the military authorities. Consulship of Pompey and Crassus. Gabinian and Manilian Laws.

7. Cicero. Cæsar. Catiline's Conspiracy. Coalition of Cæsar, Pompey, and Crassus.

8. The Civil war.

9. The Dictatorship.

II. External Affairs: Pompey in Asia. Cæsar in Gaul. His entrance into Britain.

III. The Empire.

1. Rome in the Time of Augustus.

2. Rome after the Time of Augustus.

3. The Christians.

4. Rome to-day. What is left of Art, Language, Literature, Law.

Geography: Eurasia. As the pupils of the grade have not studied Eurasia, they have not the geographical basis for the work as planned in Roman and English history. Eurasia, therefore, will be taught in both the Seventh and Eighth Grades.

1. Location. What we have from Eurasia. People we know there. Routes over which they traveled. Time. Distance. Other routes.

2. Size. Latitude and Longitude. Area. Extreme length and width. Coastline. Compare with North America. The pupils will look up data in the reference books.

3. Examine pictures of the various regions of Eurasia.

4. The teacher will give an oral description, molding in sand.

5. Physical Features. Mountains, location, and height. Plains, seas, rivers, plateaus, and peninsulas.

Pupils will use the library for information on

the above topics. The teacher will draw the country, beginning with the Pamir, as the pupils describe it. The pupils will model in sand.

6. Great central plateaus. Great depression. Great Siberian plains. European plains. Great Britain and Scandinavia. A less superficial study of the country will now be made according to the above classification. Pupils will study the surface, climate, and vegetation of each district. Pictures will be freely used and typical landscapes painted.

7. Europe and Asia will next be taken up separately. The pupils will study the political divisions of each continent, gaining whatever knowledge is available through reading, through pictures, and through the objects in the school museum. They will supplement this knowledge by correspondence with school children in the various countries of Eurasia.

In these letters they will describe our own country and ask in return similar information regarding the foreign countries. Before writing these letters, however, they will in all ways possible acquaint themselves with these foreign countries. The writing of these letters will be a weekly class exercise, forming the basis for a series of lessons in English.

They will also exchange any material which will add to the geographical knowledge. This will include such articles as monthly paintings of the landscape, pressed leaves, collections of insects, butterflies, seeds, minerals and soils, photographs or sketches of interesting objects seen on field excursions, pictures of classes in the gymnasium or at work in the school-room, and sketches of articles made in the shop. Correspondence will begin at once with schools in Korea, China, India, Ceylon, Greece, Norway, and Japan. See Miss Baber's Outline of Geography.

Nature Study: Previous to this year, the pupils in the Eighth Grade have done no work in Nature Study. The Seventh Grade, therefore, is prepared to do the same line of work as the Eighth Grade. So for this year it has been deemed advisable to teach these grades in the same class. The plan for the work will be found among the Eighth Grade outlines.

Mathematics: Number will be correlated with Nature Study, Geography, and Manual Training. For additional work, see Mr. Flint's outline for Eighth Grade.

Speech, Oral Reading, and Dramatic Art: Julius Cæsar. Selection from Cicero's orations. Selection from *The Flight of Nydia*, Bulwer. Sight-reading of *One Who Lived Long, Long Ago*, from *Giovanni*, Frances Hodgson Burnett.

Manual Training and Industrial Art: This month the pupils will make Christmas presents, the articles to be made being chosen from the following list:

Woodwork: Cabinets, screens, glove-boxes, shelves, bookcases, tables, tabourettes, shirt-waist boxes.

Bent Ironwork: Lamps.

Hammered Brasswork: Candlesticks, trays.

Weaving: Baskets, cushions, bags, needle-books.

Clay Modeling and Casting: Candlesticks, statuettes, tiles, toys.

Sewing, Embroidery, and Applique: Sofa-pillows, table-covers, scarfs, belts, ornamental bands, book-covers.

Bookbinding: Illuminated verses with decorated book-covers.

Physical Training: In addition to the exercises and apparatus work with Mr. Kroh, the class will make a study of respiration in relation to ventilation.

Eighth Grade

Nott William Flint

Geography

The subject for the year is a review of the geography of the world through RIVERS. So far the children have been studying the birth and development of a typical river, using specific streams only as illustrations of particular points under discussion. From this time on they will take up specific rivers, and study each in some detail. The rivers to be discussed each month will be grouped in such a way as to illustrate some one feature of river history. During one month, for example, only tidal rivers will be treated; during another, delta rivers; during a third, rivers which have built their banks above the surrounding country, and so on. For December the group will consist of the most important delta rivers of Eurasia.

I. The Hoang-ho and Yang-tse-Kiang.

1. The Chinese delta plains. (a) Their extent. (b) Their fertility. (c) Kinds of crops. (d) Density of their population. (e) Floods. (f) Safety measures against floods.

2. Navigation on Chinese rivers. (a) Its importance in a country practically without railroads. (b) Kinds of craft. (c) Goods transported. (d) Scenery. (e) River life.

3. The great fertility and protected situation of the Chinese river plains as furnishing an ideal "nest-place" for a race.

II. The Brahmaputra and Ganges.

1. Their sources beyond the Himalayas. (a) They bring the drainage of the northern as well as of the southern slopes of the Himalayas into India. What does this tell us of the topography of the country?

2. Area of the combined deltas, 50,000 square miles. Depth, as tested by borings, 481 feet.

3. Richness of the soil.

4. Crops. (a) Kinds. (b) Number per year.

5. Density of population.

6. Scenery.

7. The Ganges as a sacred river. (a) Pilgrimages to Allahabad. (b) Sacred cities.

8. These plains as the cradle of the Hindu race.

III. The Danube.

1. Delta begins 45 miles from Black Sea and has area of 1,000 square miles; uncultivated.

2. Basin 300,000 square miles; 400 tributaries, of which 100 are navigable.

3. Upper courses frozen all winter. Danger from this source. Increased erosive power on this account.

4. Improvement of channel under international commission. Results. Expense met by river taxes.

5. Vienna.

IV. The Rhine.

1. Formed by drainage of 150 Swiss glaciers. Steep gradient in upper courses.

2. Purified in Lake of Constance.

3. Falls at Schaffhausen.

4. The picturesque Rhine, from Bergen to Siebengebirge. Narrow, rocky valley. Lateral ravines. Ruined castles. Vineyards.

5. Low banks in Holland. Embankments.

6. Character of lower course now compared with description in Roman records as an estimate of amount of work done.

7. One of chief waterways of Europe from earliest times. (a) Favorable Situation: Flows through populous and varied regions. Empties into much-frequented sea opposite England. Connected by Rhine-Rhône and Rhine-Marne canals with South of France and with basin of Danube by Ludwig's Canal.

8. Total weight of goods forwarded yearly, 1,000,000 tons; timber, coal, iron, agricultural produce, manufactured goods.

9. Timber rafts; floating villages.

10. Cities: Spires, Mainz, Coblentz, Bonn, Cologne, Düsseldorf.

11. Importance of Rhine in German thought and literature: Legends, ballads, Niebelungenlied.

12. Victor Hugo's dictum:

"Le Rhin réunit tout. Le Rhin est rapide comme le Rhône, large comme la Loire, encaissé

comme la Meuse, tortueux comme la Seine, limpide et vert comme la Somme, historique comme le Tibre, royal comme le Danube, mystérieux comme le Nil, pailleté d'or comme un fleuve d'Amérique, couvert de fables et de fantômes comme un fleuve d'Asie."

References: Wells Williams, *The Middle Kingdom;* Hunter, *The Indian Empire;* Marshman, *History of India;* Encyclopædia Britannica, under *Rhine* and *Danube*.

Mathematics

The number work for the month will be correlated with the study of ventilation, history, and geography. In the subject of ventilation there will be as much applied mathematics as the class can handle.

In estimating the cubic volume of air in the various rooms the pupils will be required to make precise measurements, so that great care on their part will be necessary in estimating the corrections to be made for inequalities and projections of the wall, and for solid bodies. The students of the Seventh and Eighth Grades will not be too young to find the height of rooms and of buildings by triangulation, or by the use of the quadrant. To do this the class will need to work out at least one proposition in geometry: that the sides of similar triangles are in proportion.

In history there will be the comparison of the areas and populations of European countries.

In geography comparisons of the lengths of various rivers in Eurasia; comparisons of actual to direct lengths of rivers; computations of the size of river-basins, and of the carrying or erosive power of rivers. For instance, such examples as the following will be a great reinforcement to the study of geography:

The annual discharge of solids in solution by the Rhine is 92.3 tons per square mile of river. What is the total discharge per year?

How long will it take for the Rhine to wear its basin down one inch? etc.

From the history of Ostia, Ravenna, and Adria calculate how long it would take to build land into the sea a distance of one mile; of fifty miles.

Nature Study

For December and January—the cold months—the subject will be the warming and ventilation of houses. Beginning with its particular room, the class will proceed to study the fresh-air supply of the whole school, and will then visit some convenient public building to see a ventilating system in operation. Each student will also make a special report to the class on the means for ventilating his sleeping-room and the house he lives in. Before this subject is dropped, each pupil will present a drawing, accompanied by full explanations, embodying his idea of a system of ventilation for the new building of the Chicago Institute.

I. (a) The class might well begin this study by reading the cunning methods bees use to ventilate their hives in warm weather (see Encyclopædia Britannica, or Huber, on *Bees*). (b) Constituents of normal air: N 79%, O 20.96%, CO_2 .04%. Very pure air: O 20.99%, CO_2 .03%. Air beginning to be bad: O 20.60%. Air in which candles will not burn: O 18.27%. (c) Show the value of oxygen to animals, and of carbondioxide to vegetables.

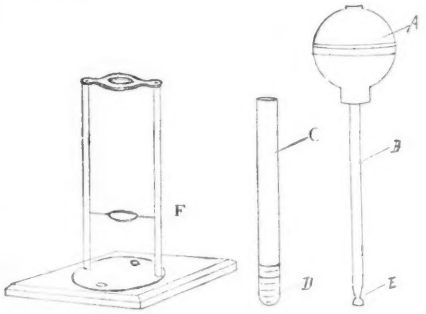
II. The breathing capacity of each child in the room will be tested and the average capacity for the room found. The pupils can then calculate precisely how much air should be brought into the room for their needs. Then, when they have discovered the absolute and imperative requirement of human beings for fresh air, they may study what possible variations in the proportions of the air constituents can be safely allowed, and how much air should be provided per hour for each person—1000–3000 cubic feet. The class will then be ready to experiment on air to find out the amount of CO_2 in a given volume.

For this experiment the best and simplest instrument is Wolfert's air-tester, which can be bought, or, preferably, made in any physics laboratory. The instrument will be easily understood from the accompanying diagram. A is a simple rubber bulb with a capacity of 28 cubic centimeters; B, a glass outlet tube with a constriction (E) near the open end; C, a glass test-tube 12 centimeters in length and 12 millimeters in diameter, with a horizontal mark near the bottom; the mark shows the height to which it must be filled with 3 cubic centimeters of perfectly clear lime-water. Upon the whitened bottom of the tube is stamped a black mark. A small standard (F), a swab, a vial of vinegar for cleaning the tube, and a bottle of clear lime-water completes the instrument.

To perform the experiment the test-tube should be filled with lime-water (a saturated solution) up to the horizontal mark. Then fill the rubber bulb with the air to be tested, insert the small tube nearly to the bottom of the lime-water, and expel the air as rapidly as may be without causing the bubbles to overflow from the test-tube, always taking care, however, to continue the pressure on the bulb until the small tube is removed from the lime-water. Repeat this process until the black mark is quite obscured by the opacity produced by the reaction of the carbonic acid upon the lime-water. The observer's point of view must be from above the mouth of the test-tube.

After each observation the tube should be washed out and wiped dry. Should a white incrustation form on the sides of the tube it can be removed with a swabbing of vinegar. The experiment should be performed by daylight, with the tube held over some white background, as a sheet of writing-paper; and care should be taken lest the result be made valueless by the experimenter's breath.

If the air be very foul, it will be necessary to examine the mark after filling and discharging the bulb a few times only, but if the air be good, twenty-five or more fillings can be expelled before an examination is necessary.



Should the mark become obscured after expiring the bulb ten or fifteen times only, that air is unfit for continuous respiration. In a sick-chamber the air should be so pure that the mark will not become invisible under the turbidity in less than thirty to forty expirations.

The following table (compiled by Professor Wolfert) will show the amount of carbonic acid in the tested air. The table reads down, *i. e.*, if one filling of air makes the lime-water turbid there would be 200 volumes of CO_2 in 10,000 volumes of air:

Number of Fillings.	Carbonic Acid per 10 M.	Number of Fillings.	Carbonic Acid per 10 M.	Number of Fillings.	Carbonic Acid per 10 M.	Number of Fillings.	Carbonic Acid per 10 M.
1	200	16	12.5	31	6.4	46	4.3
2	100	17	12	32	6.3	47	4.2
3	67	18	11	33	6.1	48	4.1
4	50	19	10.5	34	5.9	49	4.1
5	40	20	10	35	5.7	50	4
6	33	21	9.5	36	5.5	51	3.9
7	29	22	9.1	37	5.4	52	3.9
8	25	23	8.7	38	5.3	53	3.8
9	22	24	8.3	39	5.1	54	3.7
10	20	25	8	40	5	55	3.7
11	18	26	7.7	41	4.9	56	3.6
12	16	27	7.4	42	4.8	57	3.5
13	15	28	7.1	43	4.6	58	3.5
14	14	29	6.9	44	4.5	59	3.4
15	13	30	6.6	45	4.4	60	3.3

NOTE.—If Wolfert's air-tester cannot be bought or made, the experiment can be performed by using ordinary bottles—a 16-oz., 12-oz., 10-oz., 8-oz., 6-oz., 4-oz. sizes—and pouring into each half an ounce of saturated solution of lime-water. Then, after filling the remainder of space with air to be tested, cork and shake the bottles, and put them by. If, after standing, each bottle should show a turbidity in its lime-water, there would be in the air of the 12-oz. bottle less than .04% of CO_2; in the 10-oz. more than .05%; in the 8-oz. more than .06%; in the 6-oz. .08%; and in the 4-oz. more than .1%.

Oral Reading: *Horatius at the Bridge*, continued; Cicero, *First Oration against Catiline; Julius Cæsar;* Bulwer, Flight of Nydia (*Last Days of Pompeii*); F. H. Burnett, *Giovanni*. Training in hearing and producing English vowel sounds. (See Bell's vowel table in outline for Oral Reading.)

Manual Training: See the November outline. The chalk-modeling of river valleys, and basins will go on with a view to modeling Eurasia at the end of the study. The children will paint typical winter landscapes in connection with their meteorological observations.

Music: *Christmas Bells*, Niels Gade, text by Hans Christian Andersen, December COURSE OF STUDY; *Christmas Bells*, text by Longfellow, Modern Music Series, Second Book, Eleanor Smith; *Ye Shepherds, Arise*, Reinecke, 50 Children's Songs; *St. Christopher*, Mrs. Crosby Adams, December COURSE OF STUDY; *Old Christmas*, Modern Music Series, Second Book, Eleanor Smith; *Winter Song*, Modern Music Series, First Book, Eleanor Smith; *The Christmas Tree*, Edward Grieg (Augener & Co. edition).

Latin: (Katharine M. Stillwell.) On opening school it was found that few of the Sixth and Seventh Grade pupils had studied either French or German. So it was thought best for this year to teach Latin in the Eighth Grade only.

The series of lessons as planned for beginners has been used in this grade, and the work will be continued according to the following outline:

Reading Lesson

1. Aliæ mēnsæ sunt marmoreæ, sed aliæ sunt citreæ.
2. Sellæ nōn multæ sunt.
3. Tua sella nōn est cathedra.
4. Mea sella est dūra.
5. Puella est in cathedrā.

Vocabulary

NOUN.	ADJECTIVE.
cathedra—easy chair.	dūra—hard.

Points to be Made

1. General review.
2. Write the conjugation; third, present indicative.

Reading Lesson

1. Puella ad scholam it.
2. Puella ā villā ad scholam it.
3. Schola est in pergulā.
4. Schola prīmā hōrā incipit.
5. Puella semper cum servā it.
6. Servæ capsās puellīs ad scholam ferunt.
7. Sellæ sunt in scholā.
8. Puellæ in sellīs sunt.
9. In tabellīs scrībunt.
10. Tabellæ sunt cēreæ.
11. Prīmā hōrā tabellæ puellārum sunt vacuæ.
12. Quintā hōrā sunt plēnæ litterārum.
13. In scholā puellæ litterās discunt et scrībunt.
14. Græcam linguam discunt.
15. Arithmēticam discunt.
16. Litterās et Græcās et Rōmānās discunt.

Vocabulary

NOUNS.	VERBS.
schola—school.	eō—go.
pergula—shop	incipiō—begin.
hōra—hour.	ferō—carry.
capsa—satchel.	scrībō—write.
tabella—tablet.	discō—learn.
lingua—language.	
arithmētica—arithmetic	
litteræ—literature	
PREPOSITIONS.	**ADVERBS.**
cum—with.	semper—always.
ad—to.	sæpe—often.
in—in.	nunc—now.
ā or āb—from.	
ADJECTIVES.	
prima—first.	Græca—Greek.
cērea—waxen.	Rōmāna—Roman.
vacua—empty.	quinta—fifth.
plēna—full.	sōla—alone.

Points to Be Made

1. Ablative.
(a) Separation.
(b) Sociative.
c. Time when.
2. Ad—with the accusative (place to which).

Questions to be Answered in Latin

1. Does the Roman girl go to school alone?
2. Who is with her?
3. What does the servant do for her?
4. When does she go to school?
5. What is on her tablet?
6. Where is the tablet?
7. Do Roman girls ever learn the Greek language first?
8. What literature do they read?

Reading

1. Mātrōna Rōmāna tunicam gerit.
2. Stolam et pallam gerit.
3. Stola est longa et albra.
4. Mātrōnæ Rōmānæ umbellās ferūnt.
5. Tunica mātrōnæ est lānea.
6. Serva lānam dēducit.
7. Mātrōnæ texit.

Vocabulary

NOUNS.	VERBS.
mātrōna—matron.	dēducō—spin.
stola—stole.	texō—weave.
umbella—umbrella.	
lāna—wool.	ADVERBS.
	ubi—where.
ADJECTIVES.	ibi—there.
lānea—woolen.	

Points to be Made

1. Genitive.
2. Dative. (Indirect object.)

Questions to be Answered in Latin

1. What does the Roman matron wear?
2. Describe the tunic.
3. Describe the stole.
4. Who spins the wool for the matron?
5. Where do they spin?

Reading

1. Plērumque stola mātrōnæ est lānā albā.
2. Cum mātrōna Rōmāna tunicam cōnexuit tum stolam induit.
3. Tum plērumque zōnā laneā cingit.
4. Dominæ līneās tunicās nōn plērumque gerunt, sed sæpe ancillæ gerunt.
5. Ancillæ lānam texunt, sed numquam sine dominā.

Vocabulary

NOUNS	VERBS.
zōna—girdle.	cingō—bind.
domina—mistress.	induō—put on.
ancilla—maid-servant.	ADVERBS.
PREPOSITION WITH	tum—then.
ABLATIVE.	numquam—never.
sine—without.	plērumque—generally.
CONJUNCTION.	ADJECTIVE.
cum—when.	līnea—linen.

Points to be Made

1. Assumptive sentences.
2. Ablative means.
3. Perfect tense.

Writing Lesson

Class will write about the school, using the first person.

Review Grammar

Declension of nouns and adjectives.

Reading

1. Puer Rōmānus bullam gerēbat.
2. Togam prætextam gerēbat.
3. Clāvus lātus et purpureus togam prætextam dīstinguēbat.
4. Cum puerī septem annōs nātī erant, ad scholam grammaticam ībant.
5. Puer erat numquam sine pædagōgō, Græcō servō, quī Græcā linguā eum īnstituēbat.

Vocabulary

NOUNS.	VERBS.
toga prætexta — dress of youth.	dīstinguō — distinguish.
clāvus — band.	īnstituō — educate.
puer — boy.	ADJECTIVES.
pædagōgus — tutor.	lātus — broad.
servus — slave.	grammaticus — grammar.
PRONOUN.	
eum.	

Points to be Made

1. Nouns; second, declension, masculine.
2. Imperfect tense.
3. Septem annōs nātī — idiom.
4. Pronouns.

Questions to be Answered in Latin

1. What did the Roman boy wear?
2. When did he attend the grammar school?
3. What did he learn there?
4. Who taught him the Greek language?

Reading

1. Ubi schola fuit? (Answer in Latin.)
2. Nōnne schola incēpit hōrā prīmā?
3. Sellæ erant in scholā.
4. Puerī in sellīs erant ante magistrum.
5. Quid in scholā puerī Rōmānī discēbant?
6. In scholā discēbant legere et scrībere.
7. Scrībēbant in tabellīs stilō, sī charta nōn fuit.
8. Græcam linguam discēbant.
9. Perdiscēbant opera Naevii et Ennii, prīmōrum poētārum Latinōrum.
10. Arithmēticam discēbant.
11. Charta nōn erat, ergō tabula erat cuīque puerō.
12. Tabulīs pictīs in mūrīs scholæ fābulās discēbant.
13. Ferula quoque erat in scholā.

Vocabulary

Nouns.	Verb.
magister—master (school).	legere—to read.
stilus—writing instrument.	Preposition.
charta—paper.	ante—in front of.
opus—work.	Conjunctions.
poēta—poet.	sī—if.
ferula—rod.	ergō—therefore.
fābula—story.	Pronoun.
mūrus—wall.	quisque.
tabula picta—painting.	Interrogative Particles.
Adjective.	Quid—what.
Latīnus—Latin.	Nōnne.

Points to Be Made

1. Question with nōnne.
2. Conditional, sī.

Reading

1. Schola Rōmāna bona fuit, sed magister sevērus fuit.
2. Sevērus quidem fuit, sed iūstus et bonus.
3. Impiger is fuit.
4. Discipulus cum malus est, schola quoque mala est.
5. Vīsne scholam tuam esse bonam?
6. Puer quī nōn attentus est, numquam parātus est.
7. Tūne semper attentus es?
8. Cum scholæ hōra est, opus fac; cum lūdī hōra est lūdō tē dā.
9. Sīc semper lætus eris.

Vocabulary

Nouns.	parātus—prepared.
discipulus—pupil.	lætus—happy.
lūdus—play.	impiger—energetic.
Adverbs.	Verbs.
quidem—indeed.	volō (vis)—wish.
sīc—thus, in that way.	faciō (fac)—do.
Adjectives.	dō (dā)—give.
sevērus—stern, severe.	esse—to be.
iustus—just.	Pronoun.
attentus—attentive.	tū—second person.

Writing Lessons

Write a comparison between a Roman and an American school.

Write paradigms.

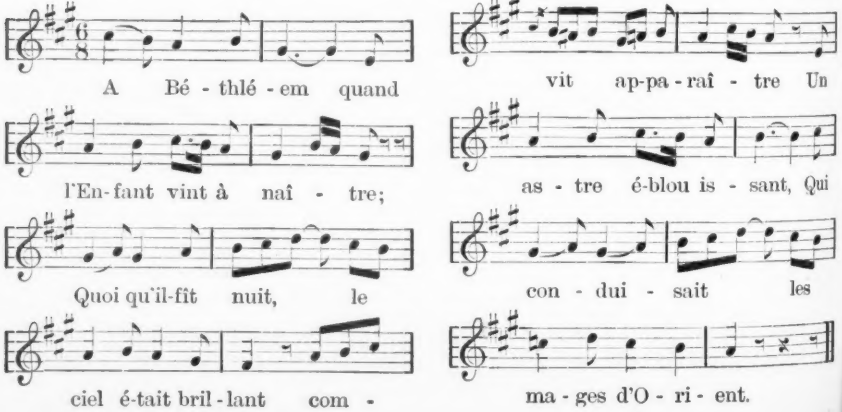
First declension nouns.

Second declension nouns, masculine.

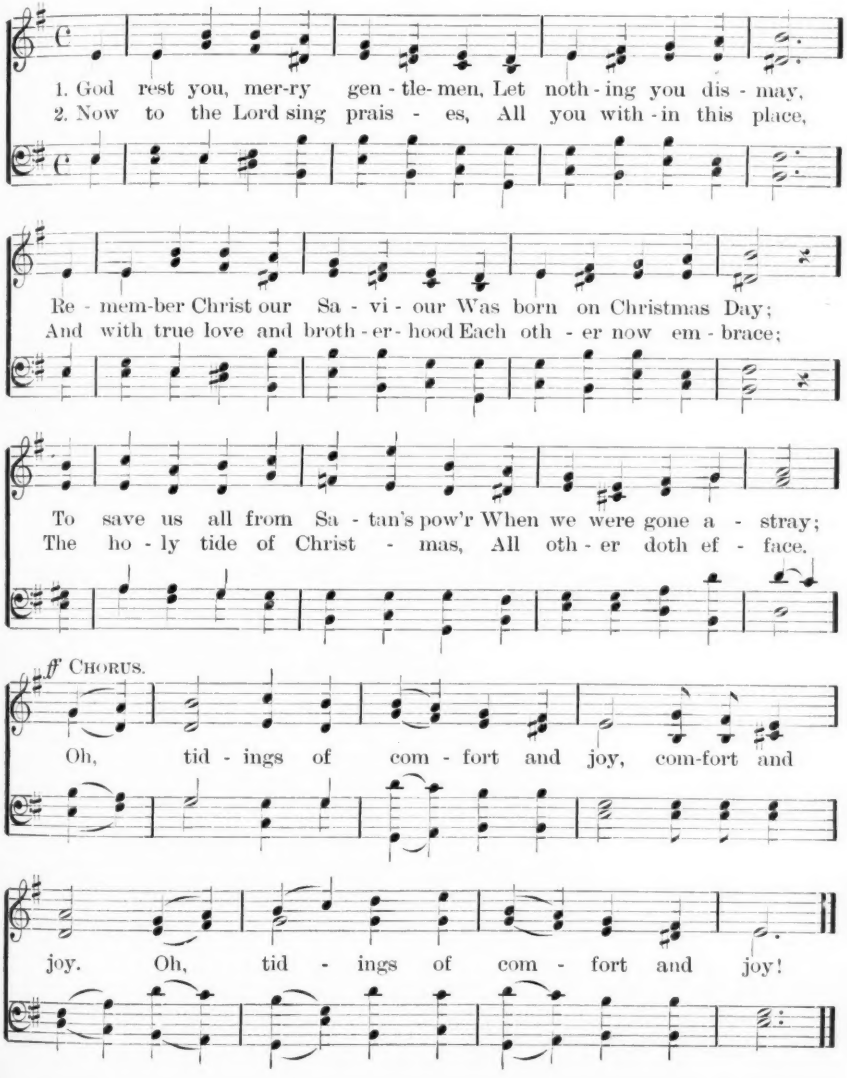
Verbs, third conjugation, indicative mode, present, imperfect, future and perfect tenses.

Write the declension of adjectives to agree with nouns.

French Christmas Song

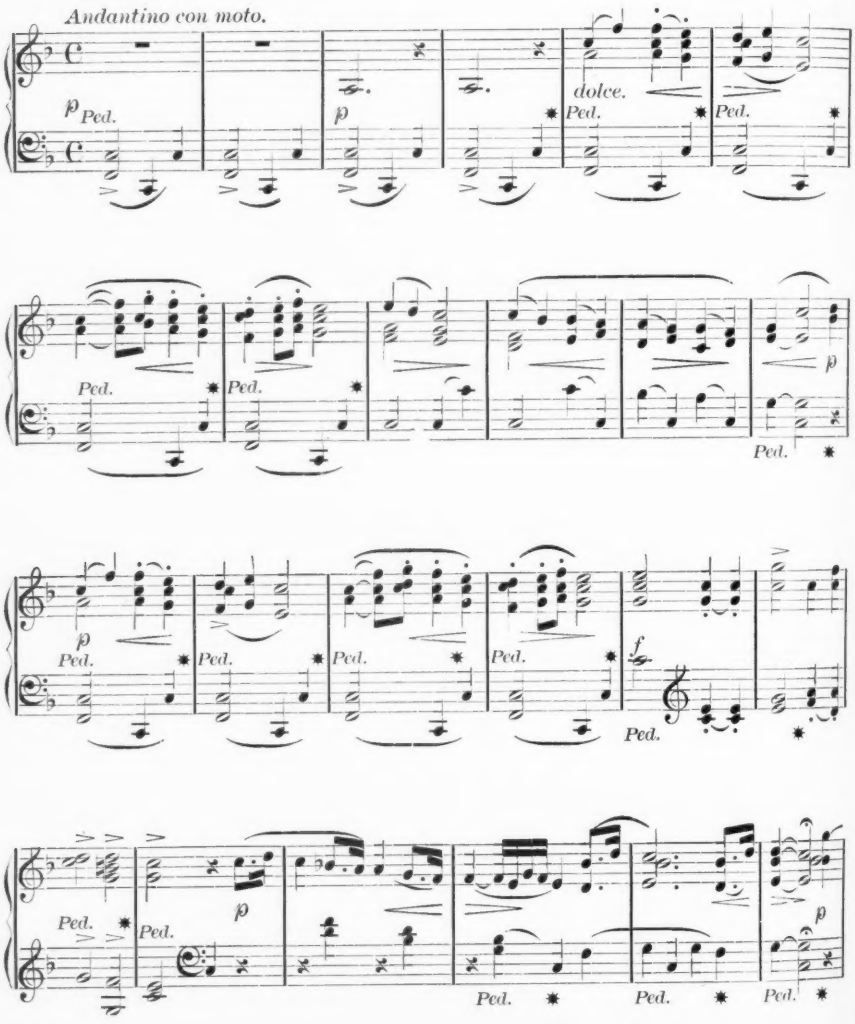
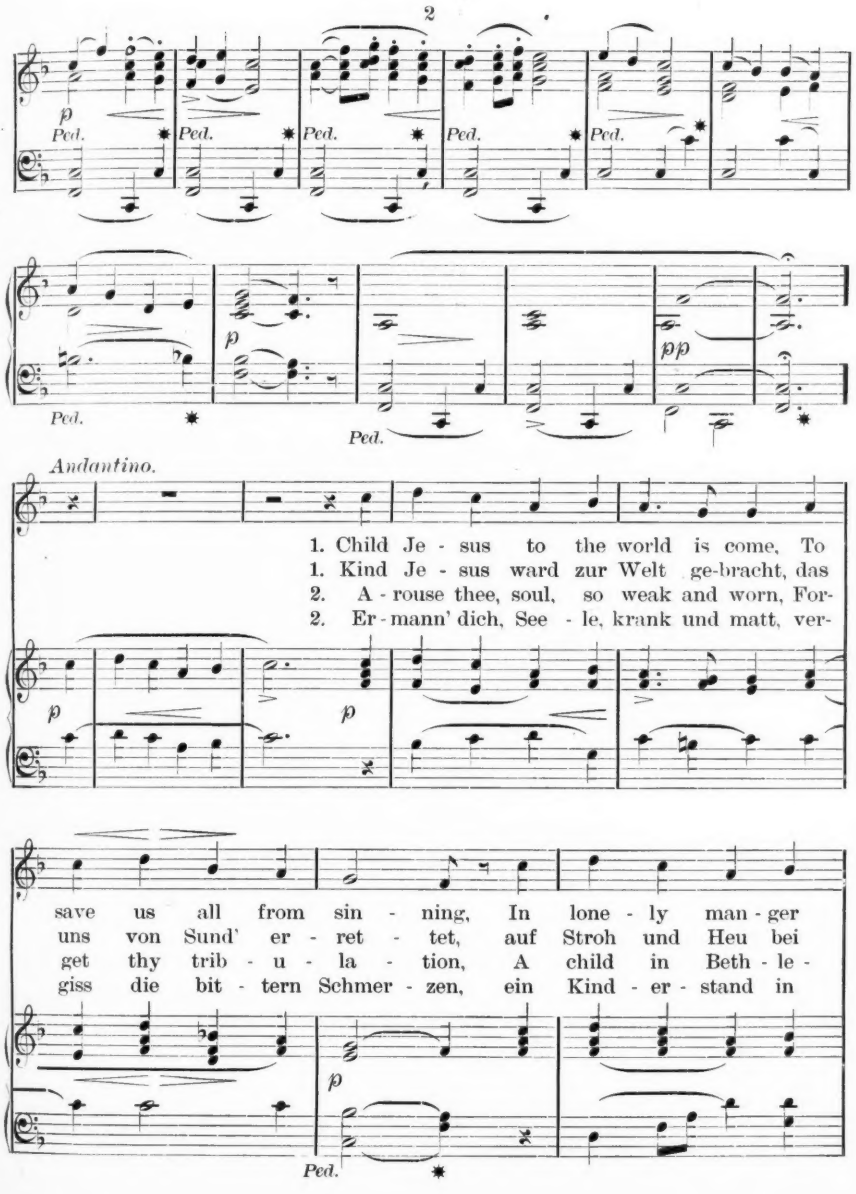
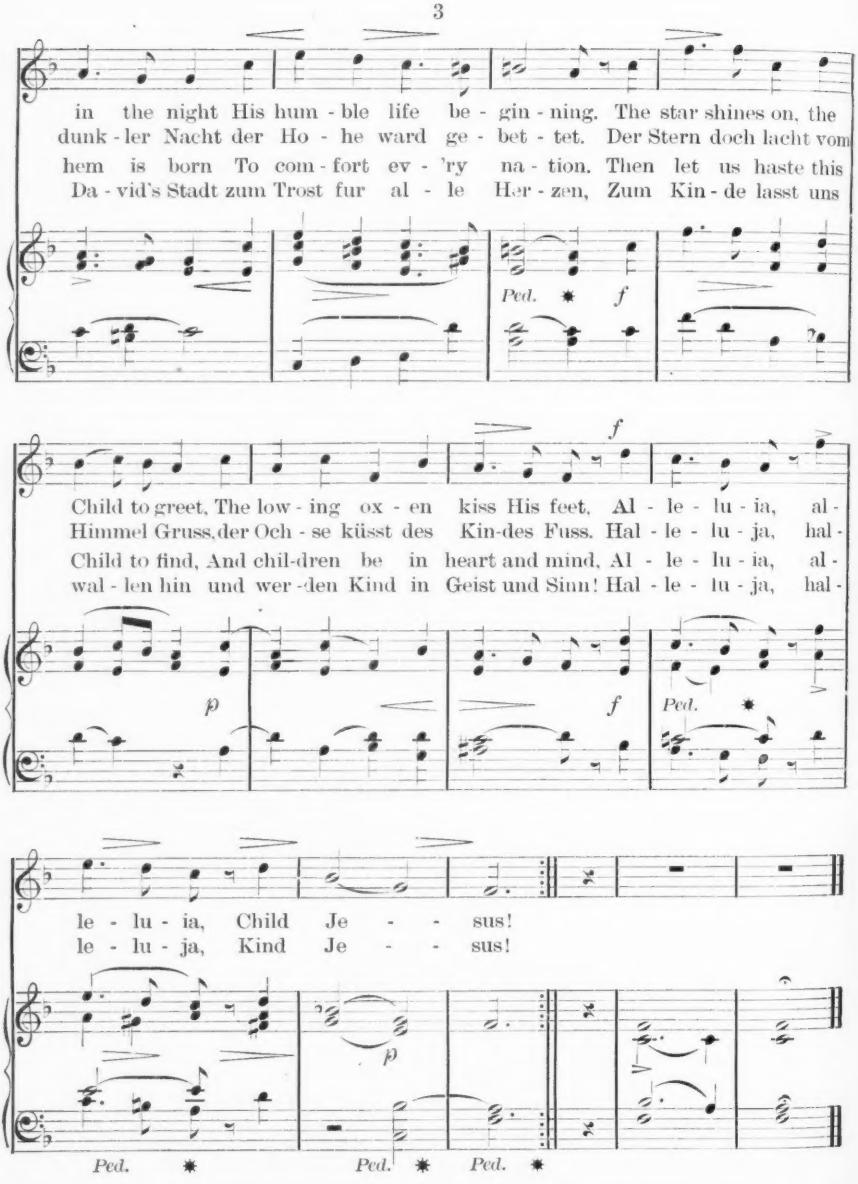

A Bé - thlé - em quand
l'En-fant vint à naî - tre;
Quoi qu'il-fît nuit, le
ciel é-tait bril - lant com -
me en plein jour; et l'on
vit ap-pa - raî - tre Un
as - tre é-blou is - sant, Qui
con - dui - sait les
ma - ges d'O - ri - ent.

God Rest You, Merry Gentlemen

OLD ENGLISH CHRISTMAS CAROL.

1. God rest you, mer-ry gen - tle- men, Let noth - ing you dis - may,
2. Now to the Lord sing prais - es, All you with - in this place,
Re - mem-ber Christ our Sa - vi - our Was born on Christmas Day;
And with true love and broth - er - hood Each oth - er now em - brace;
To save us all from Sa - tan's pow'r When we were gone a - stray;
The ho - ly tide of Christ - mas, All oth - er doth ef - face.
ff CHORUS.
Oh, tid - ings of com - fort and joy, com-fort and
joy. Oh, tid - ings of com - fort and joy!

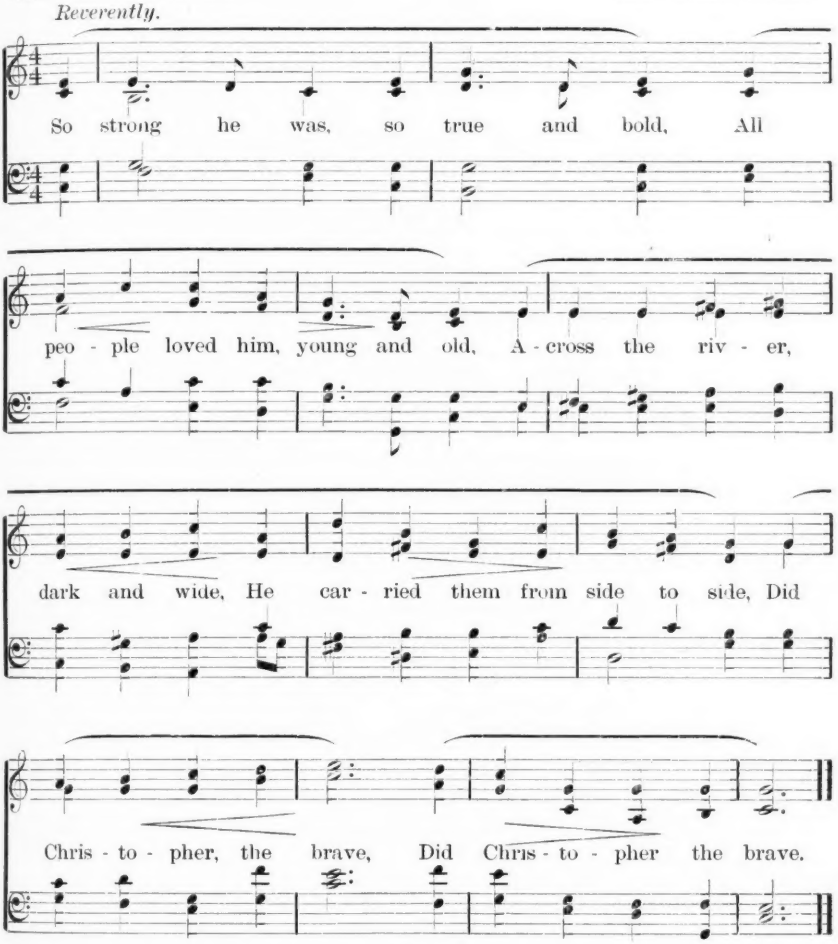
Christmas Hymn

(Die Weihnachts-Glocken.)

HANS CHRISTIAN ANDERSON. NIELS GADE.

2
p
Ped.
Ped.
Ped.
Ped.
Ped.
p
pp
Ped.
Ped.
Andantino.
1. Child Je - sus to the world is come, To
1. Kind Je - sus ward zur Welt ge-bracht, das
2. A - rouse thee, soul, so weak and worn, For-
2. Er - mann' dich, See - le, krank und matt, ver-
p
p
save us all from sin - ning, In lone - ly man - ger
uns von Sund' er - ret - tet, auf Stroh und Heu bei
get thy trib - u - la - tion, A child in Beth - le -
giss die bit - tern Schmer - zen, ein Kind - er - stand in
p
Ped.

3
in the night His hum - ble life be - gin - ning. The star shines on, the
dunk - ler Nacht der Ho - he ward ge - bet - tet. Der Stern doch lacht vom
hem is born To com - fort ev - 'ry na - tion. Then let us haste this
Da - vid's Stadt zum Trost fur al - le Her - zen, Zum Kin - de lasst uns
Ped.
f
Child to greet, The low - ing ox - en kiss His feet, Al - le - lu - ia, al -
Himmel Gruss, der Och - se küsst des Kin-des Fuss. Hal - le - lu - ja, hal -
Child to find, And chil-dren be in heart and mind, Al - le - lu - ia, al -
wal - len hin und wer -den Kind in Geist und Sinn! Hal - le - lu - ja, hal -
p
f
Ped.
le - lu - ia, Child Je - - sus!
le - lu - ja, Kind Je - - sus!
p
Ped.
Ped.
Ped.

St. Christopher

ANNE ELIZABETH ALLEN. MRS. CROSBY ADAMS.

Reverently.

So strong he was, so true and bold, All
peo - ple loved him, young and old, A - cross the riv - er,
dark and wide, He car - ried them from side to side, Did
Chris - to - pher, the brave, Did Chris - to - pher the brave.

2. His King he loved, his King he served,
Through weather cold, nor ever swerved
From work that cost him toil and pain,
From work that showed so little gain,
This Christopher the brave.

3. May little children serve this King,
As this good man, and to Him bring
Just what they have that's best and true,
To give unto the King he knew,
St. Christopher, the brave.

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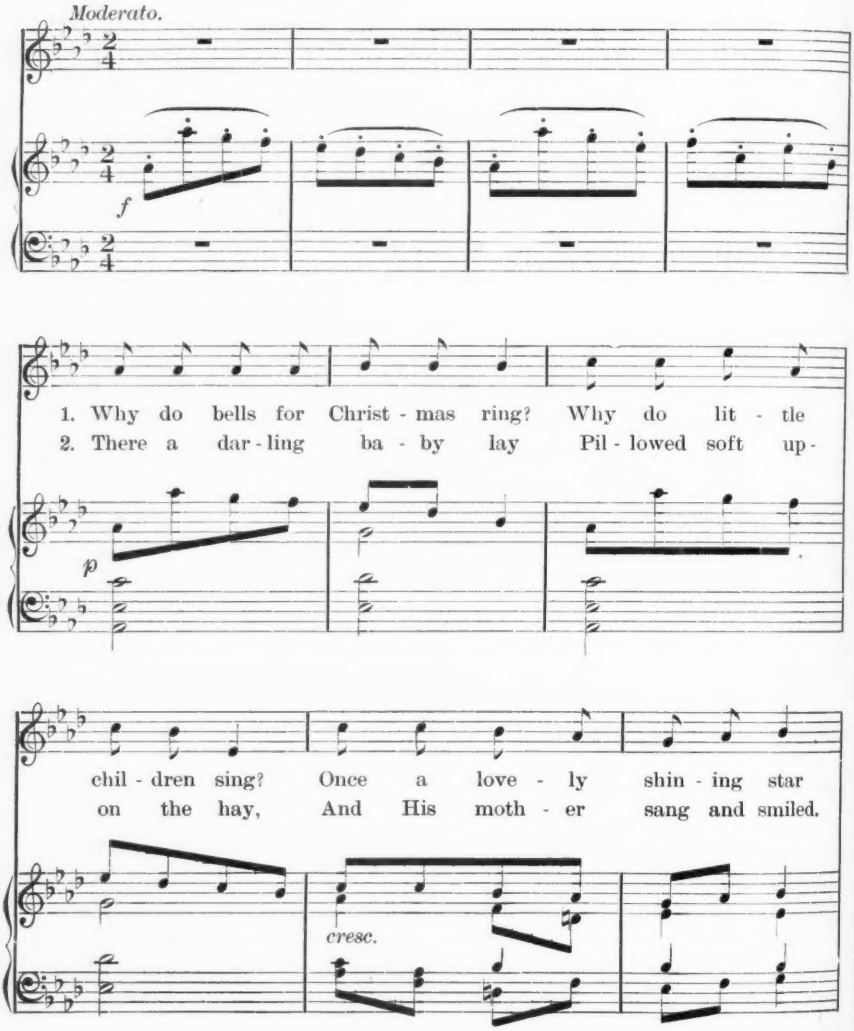
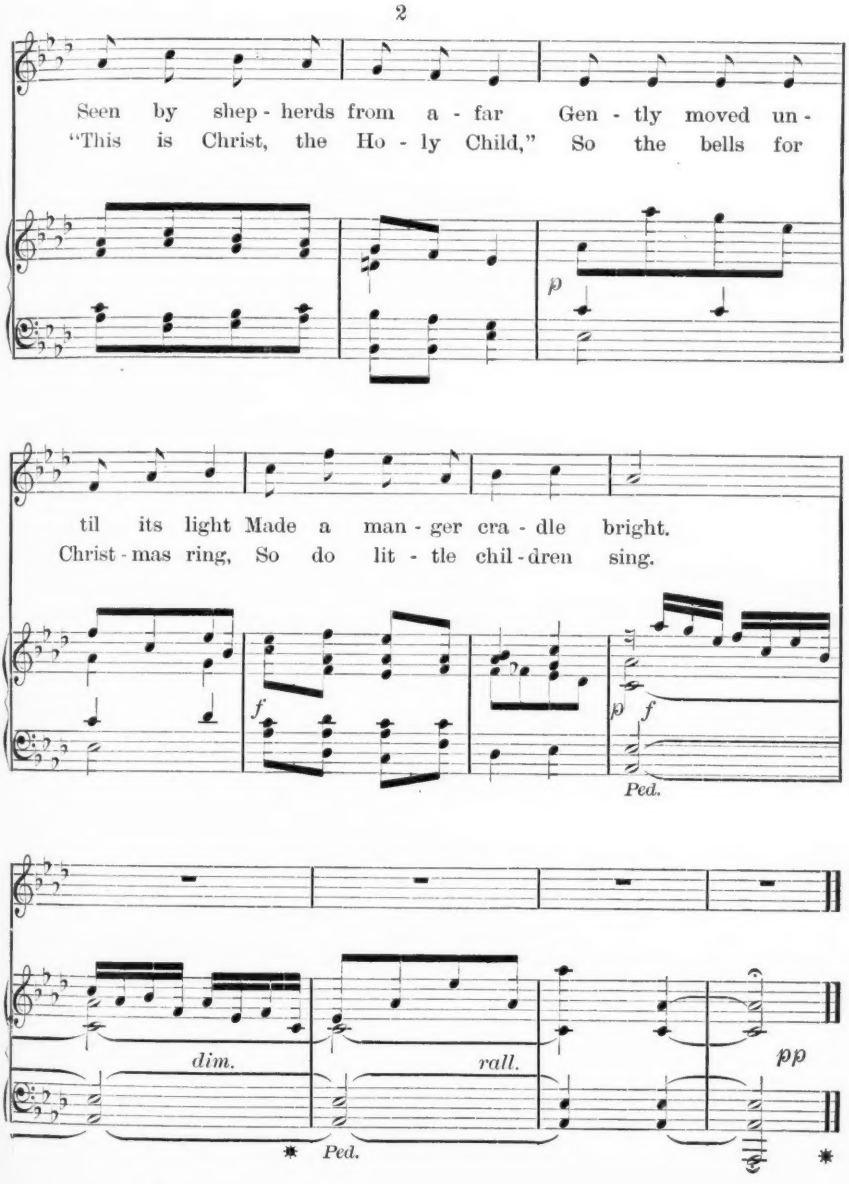
Published by Crosby Adams, 40 Randolph St., Chicago.

Christmas Song

LYDIA AVERY COONLEY. FREDERIC W. ROOT.

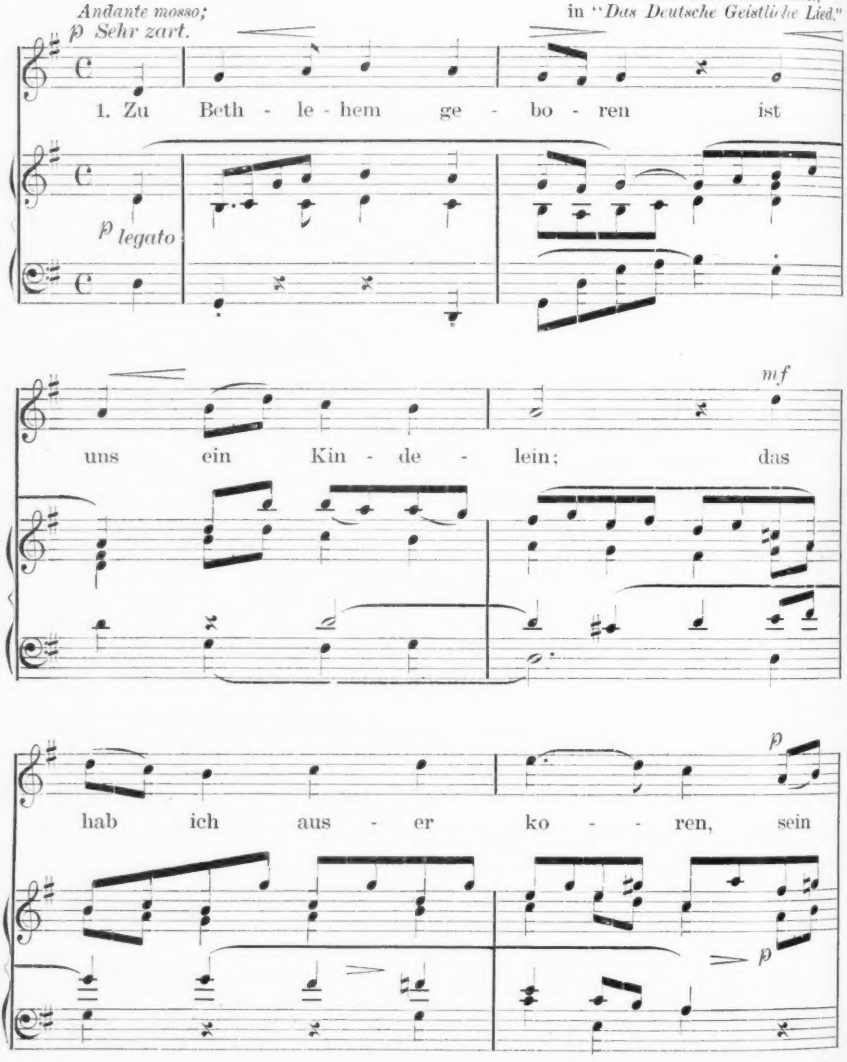
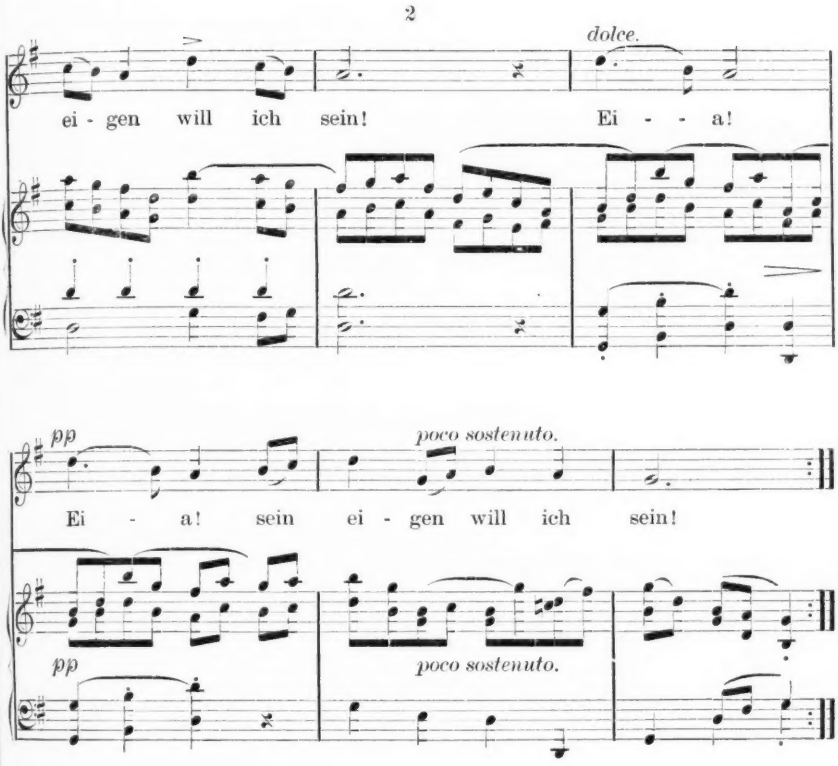

Moderato.
f
1. Why do bells for Christ - mas ring? Why do lit - tle
2. There a dar - ling ba - by lay Pil - lowed soft up -
p
chil - dren sing? Once a love - ly shin - ing star
on the hay, And His moth - er sang and smiled.
cresc.

From "Singing Verses for Children," by permission.

2

Seen by shep - herds from a - far Gen - tly moved un -
"This is Christ, the Ho - ly Child," So the bells for
p
til its light Made a man - ger cra - dle bright.
Christ - mas ring, So do lit - tle chil - dren sing.
f
p f
Ped.
dim.
rall.
pp
Ped.

"Zu Bethlehem Geboren"

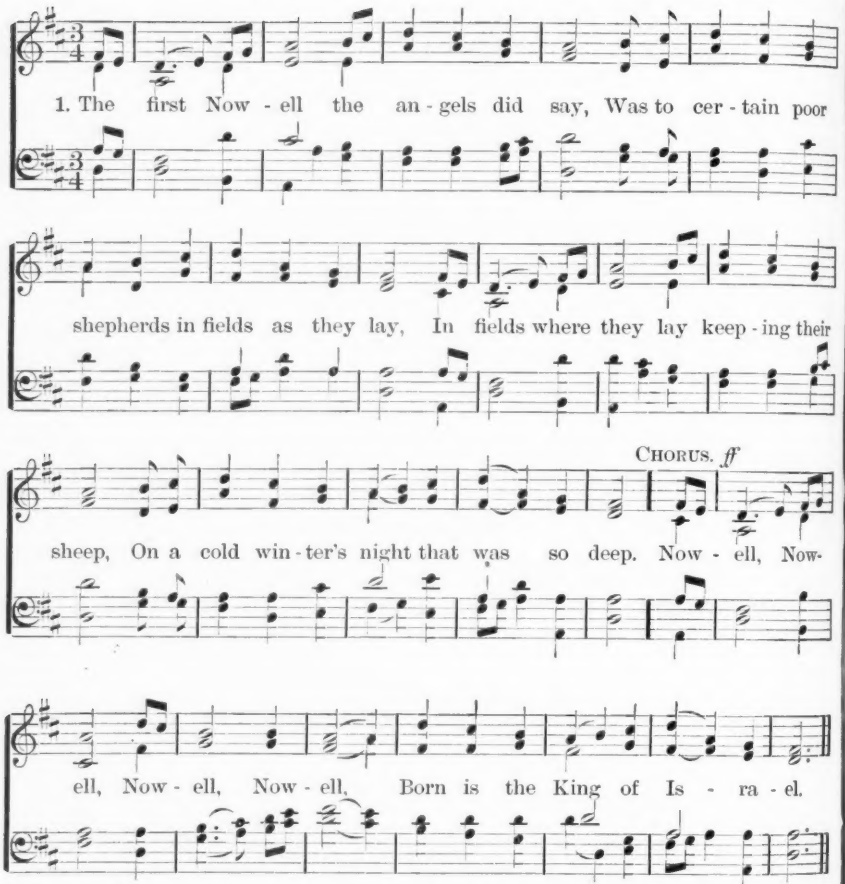
Geistliches Volksleid (1638)

Edited and arranged by
DR. HEINRICH REIMANN,
in *"Das Deutsche Geistliche Lied."*



2. Aus ganzen, reinem Herzen
Will ich dich lieben, Herr,
In Freuden und in schmerzen,
Je länger und je mehr.
Eia! Eia! je länger und je mehr.

3. Lass mich vom dir nicht scheiden,
Verknüpfe du das Band
Der Liebe zwischen beiden,
Nimm' hin mein Herz zum Pfand!
Eia! Eia! Nimm' hin mein Herz zum Pfand!

The First Nowell

OLD ENGLISH CHRISTMAS CAROL.

1. The first Now - ell the an - gels did say, Was to cer - tain poor
shepherds in fields as they lay, In fields where they lay keep - ing their
CHORUS. ff
sheep, On a cold win - ter's night that was so deep. Now - ell, Now-
ell, Now - ell, Now - ell, Born is the King of Is - ra - el.

2. They looked up and saw a star
Shining in the east beyond them far,
And to the earth it gave great light,
And so it continued both day and night.

3. And by the light of that same star
Three wise men came from country far;
To seek for a King was their intent,
And to follow the star wherever it went.

4. This star drew nigh to the North West
O'er Bethlehem it took its rest,
And there it did both stop and stay,
Right in the place where Jesus lay.

5. Then entered in those wise men three,
Fell reverently upon their knee,
And offered there in His Presence
Their gold and myrrh and frankincense.

Christmas Reading List

Description

Alton, Edmund.	*The Children's Christmas Club of Washington City. St. Nicholas*, v. 15, p. 147	
Beard, L., and Beard, A. B.	*Christmas Festivities.* (See their *American Girls' Handy Book*, p. 317-45.)	Scribner, 1898.
Boner, C.	*Transylvania*, p. 411-12	Longmans, 1865.
Calderon de la Barca.	*Life in Mexico*, p. 37-8 and 237-40	Chapman and Hall, 1843.
Chambers, R., ed.	*Christmas Day.* (See his *Book of Days*, v. 2, p. 744-63.)	
Dickens, Charles.	*Christmas Tree.* (See his *No Thoroughfare*, p. 381-404.)	Estes.
Hawthorne, Nathan'l	*English Note-Books*, v. 2, p. 177-8 and 386	Houghton, 1897.
Hervey, T. K.	*The Book of Christmas*	Wiley, 1845.
Irving, Washington.	*Christmas.* (See his *Sketch Book*, p. 254-61).	Putnam, 1881.
O'Rell, Max	*John Bull and His Island*, p. 89-92	Scribner, 1884.
Pritchard, S. J.	*The First Christmas Tree in New England. St. Nicholas*, v. 15, p. 131	
Proudfoot, A. H.	*Child's Christ Tales*	Chicago, 1886.
Reddall, H. F.	*Christmas.* (See his *Fact, Fancy and Fable*, p. 125-6.)	McClurg, 1892.
Thackeray, W. M.	*Round About the Christmas Tree.* (See his *Denis Duval*, p. 271-8.)	Harper, 1899.
Whitling, H. J.	*Pictures of Nuremburg*, v. 1, p. 222-4	Bentley, 1850.
Wiggin, R. D., and Smith, N. A.	*The Story of Christmas.* (See their *Story Hour*, p. 101-6.)	Houghton, 1899.

Christmas in Other Lands

Ambrosi, Marietta.	*Christmas Eves.* (See his *Italian Child Life*, p. 25-9.)	Lothrop, 1892.
Feudge, F. R.	*Christmas in the Far East. St. Nicholas*, v. 3, p. 165-7	
Hay, John	*Christmas in Spain. St. Nicholas*, v. 1, p. 122-4	
Kniper, A. C.	*St. Nicholas Day in Holland. St. Nicholas*, v. 24, p. 233-5	
Lloyd, L.	*Christmas.* (See his *Peasant Life in Sweden*, p. 162-218.)	Trusley, 1870.
Meldrum, D. S.	*Sint Nicolaas.* (See his *Holland and the Hollanders*, p. 84-9.)	Dodd and Mead, 1900.
Musick, J. R.	*Holidays at Honolulu.* (See his *Hawaii: Our New Possessions*, p. 230-5.)	Funk, 1898.
Nansen, F.	*Christmas at Godthaat.* (See his *First Crossing of Greenland*, p. 410-16.)	Longmans, 1897.
Pennell, E. R.	*London Christmas Pantomimes, St. Nicholas*, v. 15, p. 180-9	
Strutt, Joseph	*Fool's Dance.* (See his *Sports and Pastimes of the People of England*, p. 308-10.)	Chatto and Windus, 1898.

Strutt, Joseph.....	*Lord of Misrule.* (See his *Sports and Pastimes of the People of England*, p. 440-50.)	Chatto and Windus, 1898.
Strutt, Joseph.....	*Mummings and Masquerades.* (See his *Sports and Pastimes of the People of England*, p. 342-6.).....	Chatto and Windus, 1898.
Wallace, E. S.....	*Christmas in Bethlehem. St. Nicholas*, v. 24, p. 92-8.....	
Woodbury, J. H.....	*Christmas in the Arctic Circles. St. Nicholas*, v. 3, p. 157.....	

Poems

Alt, F. M.	*The Fool's Christmas. St. Nicholas*, v. 22, p. 152-4.....	
Bayly, T. H.....	*The Mistletoe Bough.* (See Bellamy and Goodwin, *Open Sesame*, v. 3, p. 354-6.)..	Ginn, 1892.
Benjamin, C. L.....	*Johnny's Observations on Christmas Eve. St. Nicholas*, v. 23, p. 204.....	
Blodgett, H. F.....	*December. St. Nicholas*, v. 22, p. 91-3.....	
Brotherton, A. W....	*A December Ditty. St. Nicholas*, v. 18, p. 219.	
Burke, S. J.....	*Santa Claus Street in Jingletown. St. Nicholas*, v. 24, p. 245.....	
Bush, B. E.....	*The Christmas Song of Caedmon. St. Nicholas*, v. 23, p. 145-6.....	
Butterworth, H.....	*For Christmas Day. St. Nicholas*, v. 17, p. 186-7.....	
	Christmas Carol. (See Bellamy and Goodwin, *Open Sesame*, v. 2, p. 354-5.).....	Ginn, 1891.
	A Christmas Carol. (See Norton, C. E., *Heart of Oak Books*, v. 3, p. 144.).....	Heath, 1898.
Cone, H. G.....	*In Christmas Season Long Ago. St. Nicholas*, v. 14, p. 83.....	
Cone, H. G.	*The Little Christmas Spy. St. Nicholas*, v. 16, p. 83.....	
Coolidge, G. F.....	*Christmas on the "Polly." St. Nicholas*, v. 17, p. 246-7.....	
Coolidge, S.....	*The Little Christmas Tree. St. Nicholas*, v. 13, p. 81.....	
Cranch, C. P.....	*How Willie Coasted by Moonlight. St. Nicholas*, v. 3, p. 168-70.....	
D., M. M.....	*Christmas Eve. St. Nicholas*, v. 19, p. 95....	
Dodge, M. M.....	*The Bloom of the Christmas Tree. St. Nicholas*, v. 20, p. 89.....	
Dodge, M. M.....	*Song of St. Nicholas.* (See her *Rhymes and Jingles*, p. 39-41.).....	Scribner, 1898.
Dodge, M. M.....	*Stocking Song on Christmas Eve.* (See her *Rhymes and Jingles*, p. 37.).....	Scribner, 1898.
Dommett, Alfred....	*A Christmas Hymn.* (See Bellamy and Goodwin, *Open Sesame*, v. 2, p. 355-7.).....	Ginn, 1891.
Field, Eugene.	*Christmas Treasures.* (See his *With Trumpet and Drum*, p. 115-7.).....	Scribner, 1899.
Guiney, L. I.....	*Tryste Noel.* (See Warner, C. D., *Library of the World's Best Literature*, v. 41, p. 16,874-5.).	International Society, 1897.

Glen, K. Y..... *Old Dolly. St. Nicholas*, v. 25, p. 167-8.....
Good News on Christmas Morning. St. Nicholas, v. 3, p. 177.....
Herford, Oliver..... *Christmas Legend.* (See his *Bashful Earthquake*, p. 52-3.)..... Scribner, 1898.
Hutchinson, H. T.... *A Christmas Letter. St. Nicholas*, v. 17, p. 113.
I Saw Three Ships. (See Bellamy and Goodwin, *Open Sesame*, v. 2, p. 362-3.)..... Ginn, 1891.
In Excelsis Gloria. (See Bellamy and Goodwin, *Open Sesame*, v. 2, p. 364-5.)..... Ginn, 1891.
Jenks, T..... *A Gentle Reindeer. St. Nicholas*, v. 18, p. 244..
The Knighting of the Sirloin of Beef by Charles the Second. (See Bellamy and Goodwin, *Open Sesame*, v. 2, p. 365-6.).. Ginn, 1891.
Larcom, Lucy..... *Christmas Green.* (See her *Poems*, p. 176-8.) Houghton, 1884.
Larcom, Lucy..... *Christmas Thought.* (See her *Poems*, p. 175.) Houghton, 1884.
Larcom, Lucy..... *Visiting Santa Claus. St. Nicholas*, v. 12, p. 82-4.....
Larcom, Lucy..... *Woman's Christmas.* (See her *Poems*, p. 311-12.)..... Houghton, 1884.
Longfellow, H. W... *Christmas Carol.* (See his *Poetical Works*, v. 6, p. 432-3.)..... Houghton, 1891.
Longfellow, H. W... *Christmas Carol.* (See his *Poetical Works*, v. 6, p. 317-9.)..... Houghton, 1897.
Longfellow, H. W... *King Olaf's Christmas.* (See his *Poetical* Works, v. 4, p. 82-4.)..... Houghton, 1897.
Lowell, J. R..... *Christmas Carol.* (See his *Poetical Works*, v. 4, p. 181-2.)..... Houghton, 1898.
Lowell, J. R..... *Vision of Sir Launfal*, pt. 2. (See his *Poetical Works*, v. 1, p. 298-304.)..... Houghton, 1896.
Lucas, E. V..... *The Holly.* (See his *Book of Verses for Children*, p. 23-4.)..... Holt, 1898.
Lynde, C. A..... *Santa Claus and His Men. St. Nicholas*, v. 2, p. 168.....
McCullough, A. W... *The Christmas Tree Lights. St. Nicholas*, v. 26, p. 112.....
Mackay, Charles..... *Under the Holly Bough.* (See Bellamy and Goodwin, *Open Sesame*, v. 2, p. 359-60.).. Ginn, 1891.
Milton, John..... *Ode on the Morning of Christ's Nativity.* (See Repplier. A., *Book of Famous Verse*, p. 182-191.)..... Houghton, 1892.
Same. (See Warner, C. D., *Library of the World's Best Literature*, v. 25, p. 10048-51.)..... International Society, 1897.
Moore, C. C..... *A Visit from St. Nicholas.* (See Norton, C. E., *Heart of Oak Books*, v. 3, p. 142-3.).. Heath, 1898.
Paine, A. B..... *Cupid and Santa Claus. St. Nicholas*, v. 26, p. 253-4.....
Perry, N..... *Christmas Day. St. Nicholas*, v. 10, p. 92.....
Poulsson, Emilie..... *Santa Claus and the Mouse.* See her *In the*
Pyle, K..... *Child's World*, p. 122-4.)..... Milton Bradley, 1898.
December. St. Nicholas, v. 18, p. 135.....
Rice, D. G..... *A New Mother Goose Jingle. St. Nicholas*, v. 24, p. 115.....

Riley, J. W..... *Das Krist Kind.* (See his *Afterwhiles*, p. 14-18.)..... Scribner, 1898.

Riley, J. W..... *To Santa Claus.* (See his *Afterwhiles*, p. 96-7.)..... Scribner, 1898.

R"ey, J. W..... *What Chis'mas Fetched the Wigginses.* (See his *Green Fields and Running Brooks*, p. 154-68.)..... Scribner, 1898.

S., E. M..... *A Southern Christmas Eve. St. Nicholas*, v. 3, p. 183.....

S., J..... *A Santa Claus Messenger Boy. St. Nicholas*, v. 21, p. 184.....

S., H. S..... *The Christmas Moon. St. Nicholas*, v. 10, p. 206.....

Sanderson, J..... *The Best Tree. St. Nicholas*, v. 24, p. 164-5..

Scott, Walter..... *Christmas in the Olden Time.* (See Bellamy and Goodwin, *Open Sesame*, v. 2, p. 360-2.)..... Ginn, 1891.

Sears, E. H..... *Christmas Song.* (See Bellamy and Goodwin, *Open Sesame*, v. 3, p. 353-4.)..... Ginn, 1892.

Sears, E. H..... *The Glorious Song of Old.* (See Bellamy and Goodwin, *Open Sesame*, v. 2, p. 357-8.).. Ginn, 1891.

Sears, E. H..... *Peace on Earth.* (See Warner, C. D., *Library of the World's Best Literature*, v. 41, p. 16861.)..... International Society, 1897.

Sherman, F. D..... *A Real Santa Claus.* (See his *Little Folk Lyrics*, p. 53-4.)..... Houghton, 1898.

Southwell, Robert... *New Prince, New Pomp.* (See Bellamy and Goodwin, *Open Sesame*, v. 3, p. 352-3.).. Ginn, 1892.

Spofford, H. P..... *The Yule-Log's Song. St. Nicholas*, v. 17, p. 195-7.....

Stein, E.....*The Little Fir-Trees. St. Nicholas*, v. 18, p. 150.....

Sterling, H. R. ..... *A Christmas Eve Thought. St. Nicholas*, v. 23, p. 169.....

Stevenson, R. L..... *Christmas at Sea.* (See Warner, C. D., *Library of the World's Best Literature*, v. 41. p. 13942-3.)..... International Society, 1897.

Stone, E. A..... *The Pie and the Clock. St. Nicholas*, v. 26, p. 113.....

Tate, Nahum..... *Christmas Hymn.* (See Warner, C. D., *Library of the World's Best Literature*, v. 41, p. 16873-4.)..... International Society, 1897.

Tennyson, Alfred.... *Birth of Christ.* (See Bellamy and Goodwin, *Open Sesame*, v. 3, p. 351.)..... Ginn, 1892.

Tennyson, Alfred.... *Christmas.* (See Norton, C. E., *Heart of Oak Books*, v. 4, p. 282-3.)..... Heath, 1898.

Tennyson, Alfred.... *Christmas Bells.* (See Bellamy and Goodwin, *Open Sesame*, v. 3, p. 348-9.)..... Ginn, 1892.

Thackeray, W. M.... *The End of the Play.* (See his *Ballads and Miscellanies*, p. 59-61.)..... Harper, 1899.

Thackeray, W. M.... *The End of the Play.* (See Bellamy and Goodwin, *Open Sesame*, v. 3, p. 358-61.)..... Ginn, 1892.

Thaxter, Celia..... *Piccola.* (See her *Stories and Poems for Children*, p. 320-1.)..... Houghton, 1899.

Same. (See Poulsson, Emilie, *In the Child's World*, p. 129-30.)..... Milton Bradley, 1898.

Thomas, E. M..... *Ye Merrie Christmas Feast. St. Nicholas,* v. 14, p. 163-5.....

Van Blarcom, V..... *Dorothy and the Christ-Child*..... Herrick, 1897.

Wells, C..... *Christmas Gifts. St. Nicholas,* v. 26, p. 233..

Wesley, Charles..... *Christmas Day.* (See Bellamy and Goodwin. *Open Sesame,* v. 2, p. 353-4.)..... Ginn, 1891.

Wiltse, S. E..... *A Jewish Legend.* (See her *Kindergarten Stories and Morning Talks,* p. 99-100.).. Ginn, 1894.

Wither, George..... *Christmas Carol.* (See Warner, C. D., *Library of the World's Best Literature,* v. 39, p. 16127-8.)..... International Society, 1897.

Wordsworth, Wm... *The Christmas Carol.* (See Bellamy and Goodwin, *Open Sesame,* v. 3, p. 349-51.) Ginn, 1892.

Stories

Alcott, L. M..... *Sophie's Secret. St. Nicholas,* v. 11, p. 25-29, 114-18.....

Allen, H..... *How a Street Car Came in a Stocking. St. Nicholas,* v. 23, p. 101-7.....

Alling, R. L. ..... *A Christmas Conspiracy. St. Nicholas,* v. 14, p. 142-5, 211-15. .....

Andersen, H. C..... *The Fir Tree.* (See his *Fairy Tales,* p. 130-40.) Dutton.

Arnstein, F..... *Christmas in the Barn.* (See Poulsson, Emilie, in *The Child's World,* p. 119-22.)..... Milton Bradley, 1898.

Bellew, A. T..... *Christmas Stars. St. Nicholas,* v. 13, p. 216-18.

Bennett, H. H..... *The Christmas Ship. St. Nicholas,* v. 25, p. 126-31. .....

Boyesen, H. H..... *Biceps Grimlund's Christmas Vacation. St. Nicholas,* v. 16, p. 122-30.....

Bradley, M. E..... *Cousin Jane's Mistake. St. Nicholas,* v. 25, p. 113-20. .....

Burgess, G..... *The Purloined Christmas. St. Nicholas,* v. 25, p. 169-171. .....

Burr, F. C..... *A Snow-bound Christmas. St. Nicholas,* v. 24, p. 99-105. .....

Butterworth, H..... *My Grandmother's Grandmother's Christmas Candle. St. Nicholas,* v. 13, p. 174-9.....

Coryell, J. R..... *A Scheming Old Santa Claus. St. Nicholas,* v. 14, p. 126-33.....

Crosby, A..... *The Elves' Gift. St. Nicholas,* v. 1, p. 108-11..

Dickens, Charles..... *Christmas Carol.* (See his *Christmas Books,* v. 1, p. 3-110)..... Estes.

Douglas, A. M..... *Santa Claus Land*..... Lee and Shepard.

Drinkwater, E. A.... *Debby's Christmas. St. Nicholas,* v. 5, p. 223-8.

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